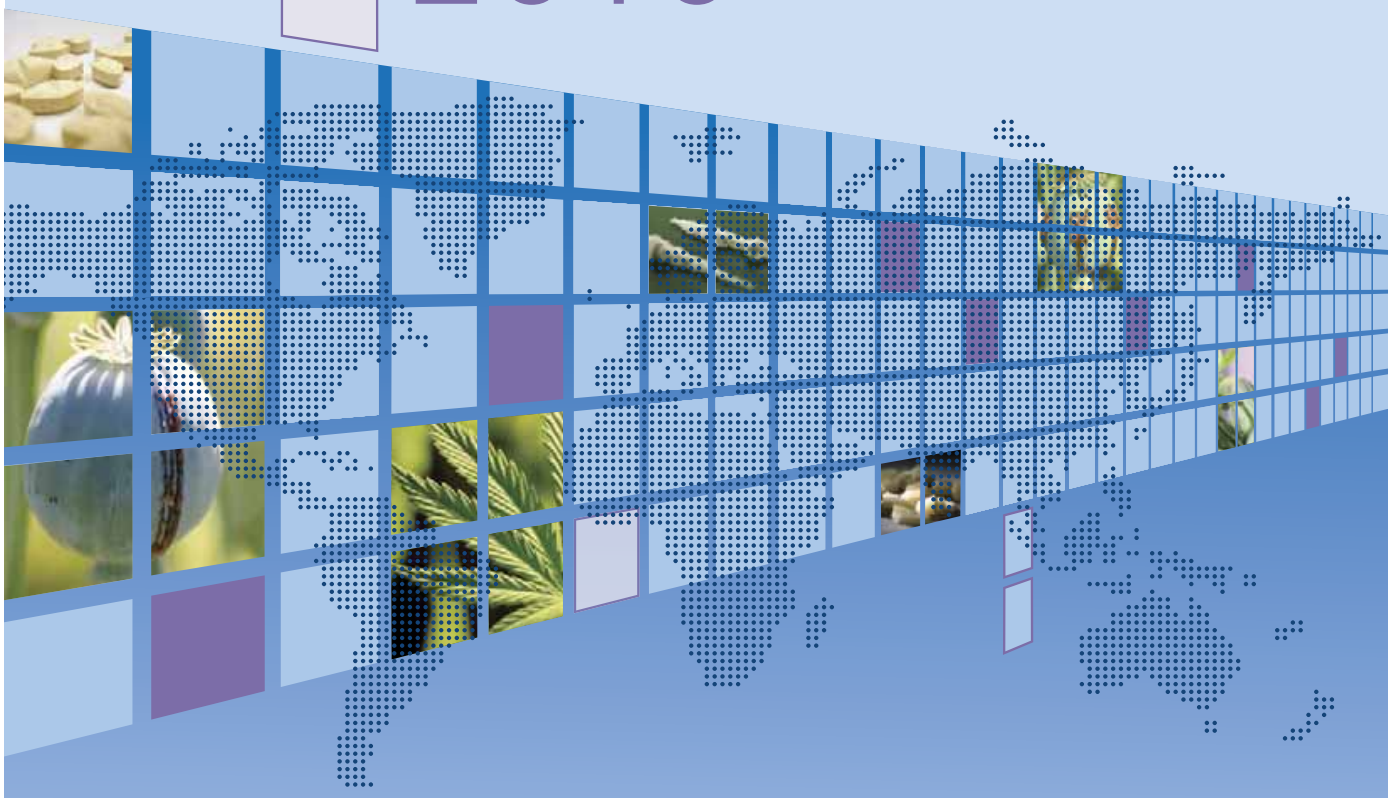
UNODC
United Nations Office on Drugs and Crime

WORLD DRUG REPORT 2010



UNITED NATIONS OFFICE ON DRUGS AND CRIME
Vienna

World Drug Report
2010

UNITED NATIONS
New York, 2010

Copyright © 2010, United Nations Office on Drugs and Crime (UNODC)
ISBN: 978-92-1-148256-0
United Nations Publication Sales No. E.10.XI.13

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. UNODC would appreciate receiving a copy of any publication that uses this publication as a source.

Suggested citation: UNODC, *World Drug Report 2010* (United Nations Publication, Sales No. E.10.XI.13).

No use of this publication may be made for resale or any other commercial purpose whatsoever without prior permission in writing from the United Nations Office on Drugs and Crime. Applications for such permission, with a statement of purpose and intent of the reproduction, should be addressed to UNODC, Policy Analysis and Research Branch.

DISCLAIMERS

This report has not been formally edited.

The contents of this publication do not necessarily reflect the views or policies of UNODC or contributory organizations and neither do they imply any endorsement.

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of UNODC concerning the legal status of any country, territory or city or its authorities, or concerning the delimitation of its frontiers or boundaries.

Comments on the report are welcome and can be sent to:

Division for Policy Analysis and Public Affairs
United Nations Office on Drugs and Crime
PO Box 500
1400 Vienna
Austria
Tel: (+43) 1 26060 0
Fax: (+43) 1 26060 5827

E-mail: wdr@unodc.org

Website: www.unodc.org

ACKNOWLEDGEMENTS

Editorial and production team

The 2010 *World Drug Report* was produced under the supervision of Sandeep Chawla, Director, Division for Policy Analysis and Public Affairs.

Core team

Laboratory and Scientific Section
- Justice Tettey
- Beate Hammond
- Matthew Nice
- Barbara Remberg

Statistics and Surveys Section
- Angela Me
- Coen Bussink
- Phil Davis
- Kamran Niaz
- Preethi Perera
- Catherine Pysden
- Martin Raithelhuber
- Anousha Renner
- Ali Saadeddin
- Antoine Vella

Studies and Threat Analysis Section
- Thibault le Pichon
- Hakan Demirbüken
- Raggie Johansen
- Anja Korenblik
- Suzanne Kunnen
- Kristina Kuttnig
- Ted Leggett
- Hayder Mili
- Thomas Pietschmann

The 2010 *World Drug Report* also benefited from the work and expertise of many other UNODC staff members in Vienna and around the world.

CONTENTS

Acknowledgements 1
Foreword 4
Introduction 7
Explanatory notes 8
Executive summary 11

1. TRANSNATIONAL DRUG MARKET ANALYSIS

1.1 Introduction 31
1.2 The global heroin market 37
1.2.1 Dimensions 38
1.2.2 The 'Northern route' from Afghanistan to the Russian Federation 48
1.2.3 The 'Balkan route' from Afghanistan to West and Central Europe 53
1.2.4 The 'Southern route' from Afghanistan via Pakistan to the world 60
1.2.5 Implications for response 63
1.3 The global cocaine market
1.3.1 Dimensions 65
1.3.2 Cocaine from the Andean region to North America 72
1.3.3 Cocaine from the Andean region to Europe 83
1.3.4 Implications for response 93
1.4 The global amphetamine-type stimulants market
1.4.1 What are ATS? 95
1.4.2 Dimensions 96
1.4.3 The demand for ATS 100
1.4.4 Key ATS issues 107
1.4.5 Implications for response 118

2. DRUG STATISTICS AND TRENDS

2.1 Understanding the extent and nature of drug use 123
2.2 Opium/heroin
2.2.1 Production 137
2.2.2 Seizures 141
2.2.3 Prices 149
2.2.4 Consumption 152
2.3 Coca/cocaine
2.3.1 Production 161
2.3.2 Seizures 166
2.3.3 Prices 170
2.3.4 Consumption 173
2.4 Cannabis
2.4.1 Production 183
2.4.2 Seizures 188
2.4.3 Prices 191
2.4.4 Consumption 194
2.5 Amphetamine-type stimulants
2.5.1 Manufacture 203
2.5.2 Seizures 207
2.5.3 Consumption 214

3. THE DESTABILIZING INFLUENCE OF DRUG TRAFFICKING ON TRANSIT COUNTRIES: THE CASE OF COCAINE

3.1 Transit countries in South America 234
3.2 Transit countries in the Caribbean 235
3.3 Transit countries in Mesoamerica 237
3.4 Transit countries in West Africa 242
3.5 Conclusion 245

4. STATISTICAL ANNEX

4.1 Production
4.1.1 Challenges in estimating the production of cocaine HCl 249
4.1.2 Afghanistan 253
4.1.3 Bolivia (Plurinational State of) 259
4.1.4 Colombia 263
4.1.5 Lao People's Democratic Republic 267
4.1.6 Myanmar 269
4.1.7 Peru 273

4.2 Consumption
4.2.1 Annual prevalence 277
4.2.1.1 Opiates 277
4.2.1.2 Cocaine 282
4.2.1.3 Cannabis 287
4.2.1.4 Amphetamine-type stimulants (excluding ecstasy) 292
4.2.1.5 Ecstasy 297
4.2.2. Treatment demand 302
4.2.2.1 Primary drugs of abuse among persons treated for drug problems in Africa 302
4.2.2.2 Primary drugs of abuse among persons treated for drug problems in Americas 303
4.2.2.3 Primary drugs of abuse among persons treated for drug problems in Asia 304
4.2.2.4 Primary drugs of abuse among persons treated for drug problems in Europe 306
4.2.2.5 Primary drugs of abuse among persons treated for drug problems in Oceania 307

For more *World Drug Report*-related material, including the **methodology** and detailed data on **drug seizures**, **prices** and **youth and school surveys**, please visit www.unodc.org/wdr.

FOREWORD

In the past decade, drug control has matured. Policy has become more responsive to the needs of those most seriously affected, along the whole chain of the drug industry – from poor farmers who cultivate it, to desperate addicts who consume it, as well as those caught in the cross-fire of the traffickers. Countries are learning from each others' experiences, and drawing on expertise from the international community.

Drug control is also increasingly taking a more balanced approach, focussed on development, security, justice and health to reduce supply and demand, and disrupting illicit flows. There is an understanding that in regions where illicit crops are grown, it is vital to eradicate poverty, not just drugs. There is a realization that underdevelopment makes countries vulnerable to drug trafficking, and other forms of organized crime: therefore development is part of drug control, and vice versa.

Most importantly, we have returned to the roots of drug control, placing health at the core of drug policy. By recognizing that drug addiction is a treatable health condition, we have developed scientific, yet compassionate, new ways to help those affected. Slowly, people are starting to realize that drug addicts should be sent to treatment, not to jail. And drug treatment is becoming part of mainstream healthcare.

Beware the side effects of complacency

This approach is paying off. The world's supply of the two main problem drugs – opiates and cocaine – has been declining over the last two years. The global area under opium cultivation has dropped by almost a quarter (23%) in the past two years, and opium production looks set to fall steeply this year due to a blight that could wipe out a quarter of Afghanistan's production. Coca cultivation is down by 28% in the past decade. Heroin and cocaine markets are stable in the developed world. Indeed, cocaine consumption has fallen significantly in the United States in the past few years. The retail value of the US cocaine market has declined by about two thirds in the 1990s, and by about one quarter in the past decade. One reason behind the violence in Mexico is that drug traffickers are fighting over a shrinking market.

Shifting the problem to the developing world

Most worrisome are recent developments in the third world. Market forces have already shaped the asymmetric dimensions of the drug economy; the world's biggest consumers of the poison (the rich countries) have imposed upon the poor (the main locations of supply and trafficking) the greatest damage.

But poor countries have other priorities and fewer resources. They are not in a position to absorb the consequences of increased drug use. As a result, there is now the risk of a public health disaster in developing countries that would enslave masses of humanity to the misery of drug dependence – another drama in lands already ravaged by so many tragedies. The warning lights are already flashing. Look at the boom in heroin consumption in Eastern Africa, or the explosion of cocaine use in West Africa or South America, or the surge in the production and abuse of synthetic drugs in the Middle East and South East Asia. We will not solve the world drugs problem by shifting consumption from the developed to the developing world.

Changing to other drugs

Furthermore, stabilization of the cocaine and heroin markets masks a growing problem of the misuse of prescription drugs in many parts of the world. And the global number of people using amphetamine-type stimulants (ATS) is likely to exceed the number of opiate and cocaine users combined. The ATS market is harder to track because of short trafficking routes (manufacturing usually takes place close to main consumer markets), and the fact that many of the raw materials are both legal and readily available. Furthermore, manufacturers are quick to market new products (like ketamine, Mephedrone and Spice) and exploit new markets. We will not solve the world drugs problem if addiction simply shifts from cocaine and heroin to other addictive substances.

What do we propose, at UNODC? We champion placing drug policy at the intersection of health, security, development and justice. Let me explain.

The right to health

a.) Universal access to drug therapy. At the United Nations, we are working with the World Health Organization, and advocate universal access to drug treatment. We work with UNAIDS to prevent an HIV epidemic among injecting addicts. I appreciate the support that is coming from the community level for these initiatives.

(b.) Universal access to therapy by means of drugs. We should not only stop the harm caused by drugs: we should unleash the capacity of drugs to do good. What do I mean? Recall that the Preamble of the Single Convention (from 1961) recognizes that "… *the medical use of narcotic drugs is indispensible for the relief of pain, …. and adequate provision must be made to ensure their availability …"* Although there is an over-supply of opium in the world, many people who suffer major illnesses have no access to palliative care. Why should a Nigerian consumed by AIDS or a Mexican cancer patient, be denied medication offered to their Swedish or American counterparts? Help us overcome cultural, professional, administrative and socio-economic factors that conspire to deny people the opium-based relief (morphine) they need.

The right to development

While the pendulum of drug control is swinging back towards the right to health and human rights, we must not neglect development.

As illustrated in various recent UNODC reports, including this one, drug production and trafficking are both causes and consequences of poverty. Indeed, 22 of the 34 countries least likely to achieve the Millennium Development Goals are in the midst – or emerging from – conflicts, located in regions that are magnets for drug cultivation and trafficking. More development means less crime and less conflict. That is why UNODC is working with governments, regional organizations and development banks to promote drug control policy as ways to foster development, and vice-versa – for example in the Balkans, Central and West Asia, Mesoamerica, West and East Africa.

The right to security

Yet, the stakes are high and getting higher. Drug-trafficking has become the main source of revenue for organized crime, as well as to terrorists and insurgents: in other words, drug-related illegality has become a threat to nations in so many theatres around the world. Recent developments in West Africa, the Sahel, and parts of Central America show the very real dangers of narco-trafficking to security, even the sovereignty of states.

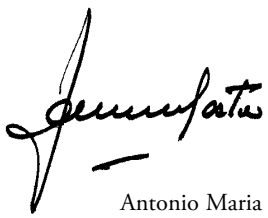
So grave is the danger that the issue is now periodically on the agenda of the Security Council. Unless we deal effectively with the threat posed by organized crime, our societies will be held hostage – and drug control will be jeopardized, by renewed calls to dump the three UN drug conventions that critics say are the cause of crime and instability. This would undo the progress that has been made in drug control over the past decade, and unleash a public health disaster.

Human rights

Above all, we must move human rights into the mainstream of drug control. Around the world, millions of people (including children) caught taking drugs are sent to jail, not to treatment. In some countries, what is supposed to be drug treatment amounts to cruel, inhuman or degrading punishment – the equivalent of torture. In several Member States, people are executed for drug-related offences. In others, drug traffickers are gunned down by extra-judicial hit squads. As human beings, we have a shared responsibility to ensure that this comes to an end. Just because people take drugs, or are behind bars, this doesn't abolish their right to be a person protected by the law – domestic and international.

***The global perspective offered by the* World Drug Report 2010**

In conclusion, this *World Drug Report* shows the various components of the drug market, and explains the dynamics that drive them. It confirms that drug policy must stay the course we have promoted at UNODC over the past years, focussed on the four basic rights of health, development, security and human rights.



Antonio Maria Costa
Executive Director
United Nations Office on Drugs and Crime

INTRODUCTION

Drug control has been on the global agenda for more than a century. As documented in the *World Drug Report 2008*, the Chinese opium epidemic in the early twentieth century spurred concerted international action, chiefly in the form of a series of treaties passed over several decades. These treaties, in particular the 1961 Single Convention on Narcotic Drugs, the 1971 Convention on Psychotropic Substances, and the 1988 Convention against the Illicit Traffic in Narcotic Drugs and Psychotropic Substances, continue to define the international drug control system. The United Nations Office on Drugs and Crime (UNODC) is the guardian of these treaties and the United Nations lead agency on drug control.

In March 2009, Member States committed to elimination or significant reduction in the global illicit drug supply and demand by 2019 and emphasized that research, data collection and analysis were essential to support and monitor the efforts required to reach that objective. UNODC has provided comprehensive assessments of the global drug problems and their evolution annually since 1999, and will continue to fulfil its mandate this year with the publication of the *World Drug Report 2010*.

In order to prepare the *World Drug Report*, UNODC relies on Member States to provide data, primarily through the Annual Reports Questionnaire (ARQ). The ARQ was distributed to 192 Member States, and UNODC received 110 replies to the drug abuse section and 114 replies to the illicit supply of drugs section from Member States (and territories). In general, most countries' ability to provide information on illicit drug supply is significantly better than their ability to provide demand-related data. Despite commendable progress, for example in the area of prevalence estimates, far more remains to be done to provide a solid, reliable basis for trend and policy analysis.

The report includes in-depth and cross-sectoral analyses of transnational drug markets (chapter 1) as well as the latest statistical data and trends regarding the world drug situation (chapter 2). This year, the report also discusses the impact of transnational drug trafficking on transit countries (chapter 3).

EXPLANATORY NOTES

Types of drugs:

ATS – Amphetamine-type stimulants (ATS) are a group of substances comprised of synthetic stimulants from the amphetamines-group of substances, including amphetamine, methamphetamine, methcathinone and the ecstasy-group substances (MDMA and its analogues). In cases where countries report to UNODC without indicating the specific ATS they are referring to, the term non-specified amphetamines is used. In cases where ecstasy is referred to in enclosed brackets ('ecstasy'), the drug represents cases where the drug is sold as ecstasy (MDMA) but which may contain a substitute chemical and not MDMA.

Coca paste (or coca base) - An extract of the leaves of the coca bush. Purification of coca paste yields cocaine (base and hydrochloride). The term 'cocaine (base and salts)' is used to refer to all three products in the aggregate.

Crack (cocaine) - Cocaine base obtained from cocaine hydrochloride through conversion processes to make it suitable for smoking.

Heroin HCl (heroin hydrochloride) – Injectable form of heroin, sometimes referred to as 'Heroin no. 4'.

Heroin no. 3 – A less refined form of heroin suitable for smoking.

Poppy straw - All parts (except the seeds) of the opium poppy, after mowing.

Terms: Since there is some scientific and legal ambiguity about the distinctions between drug 'use', 'misuse' and 'abuse', this report uses the neutral terms, drug 'use' or 'consumption'.

Annual prevalence refers to the total number of people of a given age range who have used a given drug a least once in the past year, divided by the number of people of a given age.

Maps: The boundaries and names shown and the designations used on maps do not imply official endorsement or acceptance by the United Nations. A dotted line represents approximately the line of control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Disputed boundaries (China/India) are represented by cross hatch due to the difficulty of showing sufficient detail.

Population data: The data on population used in this report comes from: United Nations, Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 2008 Revision,* 2009.

Regions: In various sections, this report uses a number of regional designations. These are not official designations. They are defined as follows:

- East Africa: Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Mauritius, Rwanda, Seychelles, Somalia, Tanzania (United Republic of) and Uganda.
- North Africa: Algeria, Egypt, Libyan Arab Jamahiriya, Morocco, Sudan and Tunisia.
- Southern Africa: Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe.
- West and Central Africa: Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo (Democratic Republic of), Congo (Republic of), Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone and Togo.
- Caribbean: Antigua and Barbuda, Bahamas, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago.
- Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.
- North America: Canada, Mexico and the United States of America.

- South America: Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela (Bolivarian Republic of).
- Central Asia and Transcaucasia: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.
- East and South-East Asia: Brunei Darussalam, Cambodia, China (including Hong Kong, Macao, and Taiwan Province of China), Indonesia, Japan, Korea (Democratic People's Republic of), Korea (Republic of), Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste and Viet Nam. The Greater Mekong Subregion (GMS) comprises Cambodia, the Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam and Yunnan and Guangxi provinces in China.
- Near and Middle East/South-West Asia: Afghanistan, Bahrain, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen. The Near and Middle East refers to a subregion which includes Bahrain, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.
- South Asia: Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka.
- East Europe: Belarus, Moldova (Republic of), Russian Federation and Ukraine.
- South-East Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Romania, Serbia and Turkey.
- West and Central Europe: Andorra, Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.
- Oceania: Australia, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, New Zealand, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu and other small island territories.

EXPLANATORY NOTES

The following abbreviations have been used in this Report:

AIDS	Acquired Immune-Deficiency Syndrome
ARQ	UNODC annual reports questionnaire
ATS	amphetamine-type stimulants
CICAD	Inter-American Drug Abuse Control Commission
CIS	Commonwealth of Independent States
COP	Colombian peso
DAINAP	Drug Abuse Information Network for Asia and the Pacific
DEA	United States, Drug Enforcement Administration
DELTA	UNODC Database on Estimates and Long Term Trend Analysis
DIRAN	Colombian National Police – Antinarcotics Directorate
DUMA	Drug Use Monitoring in Australia
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
ESPAD	European School Survey Project on Alcohol and other Drugs
EUROPOL	European Police Office
F.O.	UNODC Field Office
GAP	UNODC Global Assessment Programme on Drug Abuse
Govt.	Government
HIV	Human Immunodeficiency Virus
HONLEA	Heads of National Drug Law Enforcement Agencies
IDS	UNODC individual drug seizures database
IDU	injecting drug use
INCB	International Narcotics Control Board
INCSR	International Narcotics Control Strategy Report (United States Department of State)
INTERPOL/ ICPO	International Criminal Police Organization
LSD	lysergic acid diethylamide
MDA	3,4-methylenedioxyamphetamine (tenamfetamine)
MDE	3,4-methylenedioxyethylamphetamine
MDMA	3,4-methylenedioxymethamphetamine
NGO	Non-governmental organization
NIDA	National Institute of Drug Abuse (USA)
OECD	Organization for Economic Co-operation and Development
ONDCP	Office of National Drug Control Policy (USA)
P-2-P	1-phenyl-2-propanone (BMK)
SACENDU	South African Community Epidemiology Network on Drug Use
SAMHSA	Substance Abuse and Mental Health Services Administration (USA)
SRO	safrole-rich oils
THC	tetrahydrocannabinol
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNODC	United Nations Office on Drugs and Crime
WCO	World Customs Organization
WDR	*World Drug Report*
WHO	World Health Organization
3,4-MDP-2-P	3,4-methylenedioxyphenyl-2-propanone (PMK)

Weights and measurements:

l	litre
g	gram
mg	milligram
kg	kilogram
mt	metric ton

EXECUTIVE SUMMARY

In 1998, a special session of the UN General Assembly decided to work towards the "elimination or significant reduction" of illicit drug production and abuse by 2008, and adopted a series of sectoral plans to reach that objective.[1] Gathered at the end of the 10-year period, Member States were not satisfied with the results and declared that they were still "gravely concerned about the growing threat posed by the world drug problem."[2] The decision was taken to continue the effort over the following decade.

Can overall drug supply and demand be "eliminated or significantly reduced" by 2019, as called for by the Member States? At the national level, one can hope that many countries will be able to significantly improve their drug control situation within a decade. Will these local successes translate into an overall improvement at the global level?

A clear lesson from the history of drug control is that the mere sum of uncoordinated national and sectoral efforts, even successful ones, cannot result in a global success. Another lesson is that countries with limited means cannot resist, and counter the impact of, powerful transnational trafficking flows on their own.

To achieve the 2019 objectives, the international community needs to interweave drug supply and demand reduction interventions and integrate national efforts in the framework of renewed international strategies on the scale of the drug markets. To do so, it is urgent to improve our understanding of how illicit transnational drug economies operate. This *World Drug Report* is a contribution toward this objective.

This year's *World Drug Report* opens with an analytical discussion of three key transnational drug markets: the markets for heroin, cocaine and amphetamine-type stimulants (ATS). Cannabis is not covered here because it is increasingly produced within the country of consumption and often dealt informally through social channels. Though cannabis is the world's most popular illicit drug, it is less subject to a transnational market analysis than the other three drug classes.

The market discussion is followed by a presentation of statistical trends for all four major drug classes, including cannabis. The latest information on drug production, seizures and consumption is presented and the limitations of this knowledge are clearly articulated. While also drawing on other sources where relevant, the statistics presented were mainly gathered through the Annual Reports Questionnaire and the illicit crop surveys that UNODC produces in cooperation with Member States.

Finally, there is a chapter on a topic of growing concern for the international community: the relationship between drug trafficking and instability. This chapter focuses on the impact that the drug trade has on levels of violence and corruption in transit countries, particularly in Latin America, the Caribbean and West Africa.

This executive summary does not parallel the report, however. For the purpose of clarity, a global overview of changes in the world drug markets is presented first. This is followed by an integrated discussion of the world drug markets, including both the market analysis and the trend data. In closing, the discussion on the impact of drug trafficking on transit countries is summarized.

Global developments in illicit drug production, trafficking and consumption

Production

There have been a number of encouraging developments in global cocaine and heroin markets recently:

- The global area under opium poppy cultivation declined to 181,400 hectares (ha) in 2009 (15%) or by 23% since 2007.
- In line with declines in the area under cultivation, global opium production fell from 8,890 metric tons (mt) in 2007 to 7,754 mt in 2009 (-13%), and potential heroin production declined from 757 mt in 2007 to 657 mt in 2009.
- The global area under coca cultivation declined to 158,800 ha in 2009 (5%), by 13% since 2007 or by 28% since 2000.

1 United Nations General Assembly Special Session on the World Drug Problem (UNGASS), New York, 8-10 June, 1998 (A/S-20/4, chapter V, section A).

2 High-level Segment to the 2009 United Nations Commission on Narcotic Drugs, *Political Declaration and Plan of Action on International Cooperation towards an Integrated and Balanced Strategy to Counter the World Drug Problem,* March 2009 (E/2009/28 - E/CN.7/2009/12).

- The estimated global cocaine production fell from 1,024 mt in 2007 to 865 mt in 2008 (-16%). Global fresh coca leaf production fell by 4% in 2009 (by 14% between 2007 and 2009).

The recent successes, however, must be considered in the context of the long-term challenge. Since 1998, the year of the last UN General Assembly Special Session (UNGASS) devoted to the drug problem, global potential opium production has increased by 78%, from 4,346 mt to 7,754 mt in 2009. Fortunately, these production increases do not correspond to consumption increases, as it appears that large amounts of opium have been stockpiled in recent years. This means, however, that even if production were completely eliminated today, existing stocks could supply users for at least two years.

The increase in global potential cocaine production over the 1998-2008 period seems to have been more moderate (5%), from 825 mt to 865 mt, although there remain uncertainties around coca yields and production efficiency. Nonetheless, available data are sufficiently robust to state that global cocaine production has declined significantly in recent years (2004-2009).

In contrast to heroin and cocaine, only very broad production estimates can be given for cannabis and amphetamine-type stimulants (ATS). Due to the decentralization of production, it is difficult to track global trends in either of these markets. Between 13,000 and 66,100 mt of herbal cannabis were produced in 2008, as were 2,200 to 9,900 mt of cannabis resin. Manufacture of the amphetamines-group of ATS (amphetamine, methamphetamine, methcathinone and related substances) was in the range of 161 to 588 mt in 2008. Manufacture of drugs marketed as 'ecstasy' ranged from 55 to 133 mt.

Trafficking

Most of the long-distance trafficking involves cocaine and heroin, although some cannabis resin and ecstasy are also smuggled between regions. Much of the cannabis herb, methamphetamine and amphetamine consumed in the world is produced locally.

Global cocaine seizures have stabilized over the last few years. Seizures have declined in North America and Europe, but have risen in South and Central America. Trafficking through West Africa, which increased rapidly between 2004 and 2007, appears to have declined in 2008 and 2009, but this situation may change and needs to be monitored carefully.

Opiate seizures continue to increase. This applies to both opium and heroin seizures. Morphine[3] seizures, in contrast, declined in 2008. The largest seizures continue to be reported from the countries neighbouring Afghanistan, notably the Islamic Republic of Iran and Pakistan.

Tracking global ATS seizures is more complicated, because there are several products involved that appeal to different markets, including amphetamine, methamphetamine and 'ecstasy'. After tripling in the early years of this decade, ATS seizures have remained stable since 2006. Ecstasy seizures showed a marked decline in 2008 compared to a year earlier. Global seizures of amphetamine and methamphetamine remained largely stable at very high levels in 2008.

Global cannabis herb seizures increased over the 2006-2008 period (+23%), especially in South America, reaching levels last reported in 2004. Global cannabis resin seizures increased markedly over the 2006-2008 period (+62%) and clearly exceeded the previous peak of 2004. Large increases in cannabis resin seizures in 2008 were reported from the Near and Middle East region, as well as from Europe and Africa.

Consumption

Globally, UNODC estimates that between 155 and 250 million people (3.5 to 5.7% of the population aged 15-64) used illicit substances at least once in 2008. Globally, cannabis users comprise the largest number of illicit drug users (129 - 190 million people). Amphetamine-group substances rank as the second most commonly used drug, followed by cocaine and opiates.

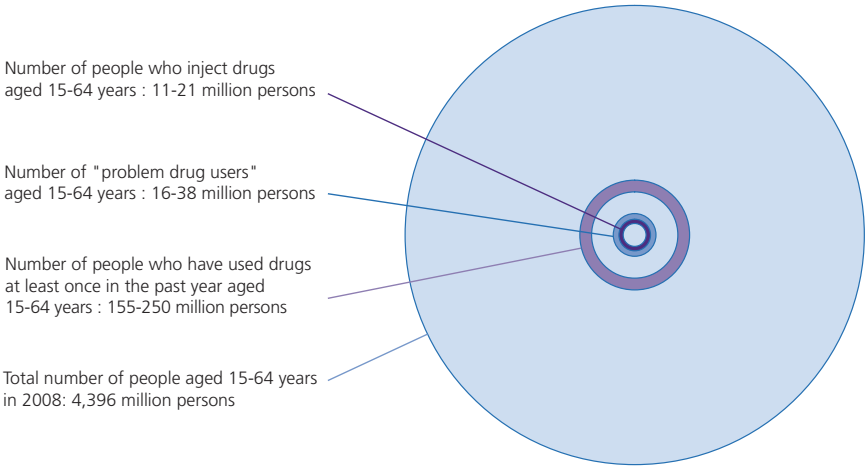
At the core of drug consumption lie the 'problem drug users': those who inject drugs and/or are considered dependent, facing serious social and health consequences as a result. Based on the global estimates of the number of cannabis, opiate, cocaine and ATS users, it is estimated that there were between 16 and 38 million problem drug users in the world in 2008. This represents 10% to 15% of all people who used drugs that year. It can be estimated that in 2008, globally, between 12% and 30% of problem drug users had received treatment in the past year, which means that between 11 and 33.5 million problem drug users did not receive treatment that year.

The lack of data in many countries still limits the understanding of the drug use problem in many countries, particularly in Africa, some parts of Asia and the Pacific Islands. The broad range of the estimates reflects the uncertainties in the available global data.

Data on the delivery of treatment services for problem drug users can provide valuable information on variations in drug use problems across regions. The share of treatment services delivered to users of different drugs varies markedly in different regions of the world. In Europe and Asia, most of the treatment demand is for

3 Morphine represents an intermediate step in the processing of opium to heroin, and is rarely consumed as a drug in its own right.

Illicit drug use at the global level, 2008



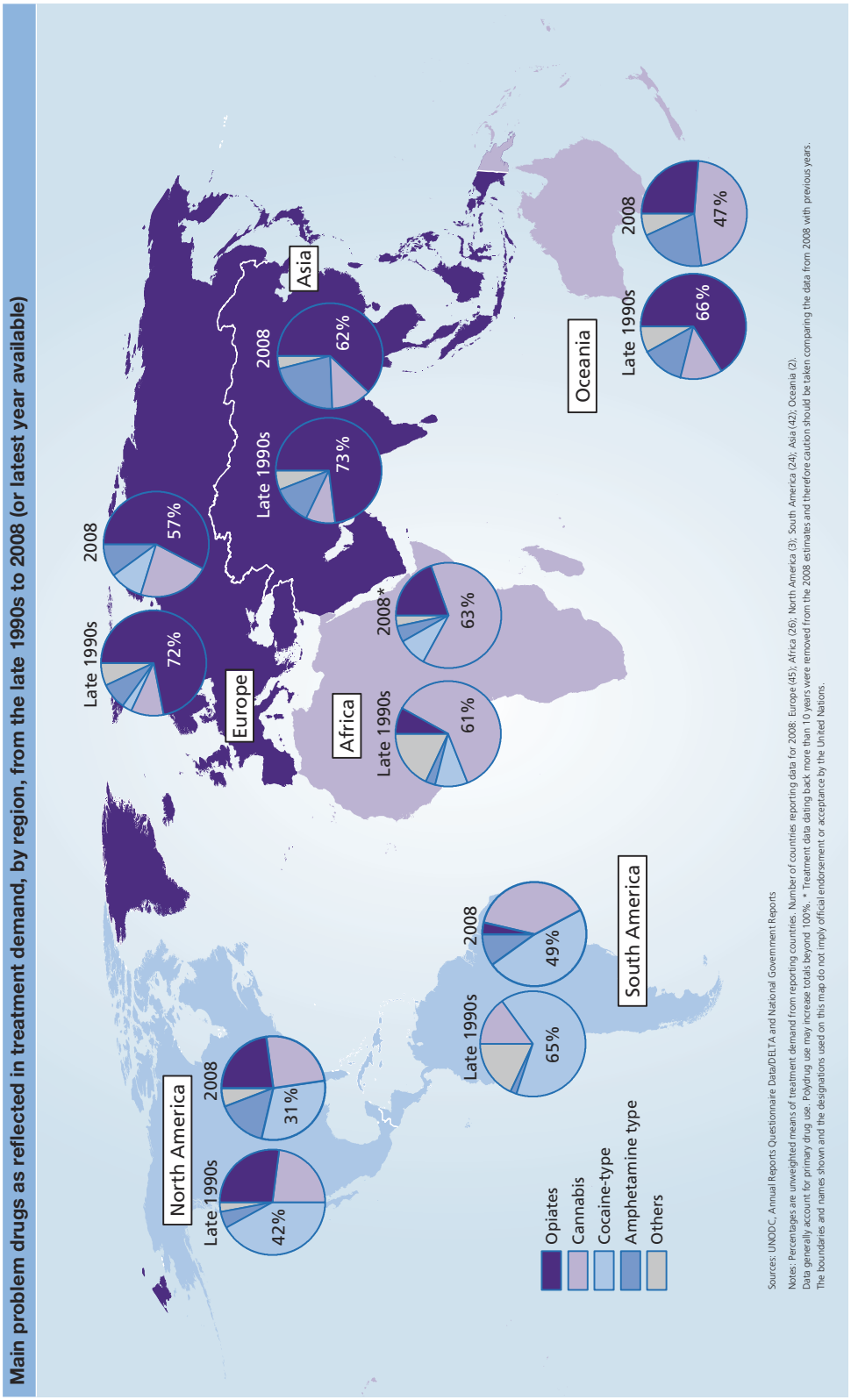
opiates. In the Americas, it is cocaine, and in Africa and Oceania, it is cannabis. These ratios have changed over time. As compared to a decade ago, treatments related to cannabis have increased in Europe, South America and Oceania, suggesting that an increased proportion of cannabis use can become problematic. Over the same period of time, cocaine treatment demand has been declining in the Americas, especially in North America, while it has increased in Europe. The relative importance of opiates for drug treatment, on the other hand, has declined in Europe, Asia and (in particular) Oceania, while it rose in Africa. ATS are commanding a growing share of treatment services globally.

Estimates of the sizes of the user populations in various parts of the world are derived from household and school surveys and indirect methods. Unfortunately, population-based surveys are conducted very irregularly in most countries, so there remain significant gaps in the knowledge of the extent of drug use in some parts of the world.

Cannabis remains the most widely consumed drug worldwide. Global annual cannabis use prevalence is estimated between 2.9% and 4.3% of the population aged 15-64. The highest is in Oceania (9.3% to 14.8%), followed by the Americas (6.3% to 6.6%). There are an estimated 15 – 19.3 million annual cocaine users (annual prevalence of 0.3% to 0.4%) in the world. North America (2%), Oceania (1.4% to 1.7%) and West Europe (1.5%) are the regions with the highest prevalence rates. Between 12.8 and 21.8 million people (0.3% to 0.5% of the world population aged 15-64) used opiates in 2008. More than half of the world's opiate users are in Asia. UNODC estimates that between 13.7 and 52.9 million people aged 15 to 64 had used an amphetamine-type substance in the past year (0.3% to 1.2% of the population), including 10.5 to 25.8 million ecstasy users (0.2% to 0.6% of the population). Oceania, East and South-East Asia, North America, and West and Central Europe are the regions with the highest prevalence rates of ATS use.

In addition to the drugs mentioned above, the misuse of prescription drugs, such as synthetic opioids, benzodiazepines or synthetic prescription stimulants, is a growing health problem in a number of developed and developing countries.

Main problem drugs as reflected in treatment demand, by region, from the late 1990s to 2008 (or latest year available)



Sources: UNODC, Annual Reports Questionnaire Data/DELTA and National Government Reports

Notes: Percentages are unweighted means of treatment demand from reporting countries. Number of countries reporting data for 2008: Europe (45); Africa (26); North America (3); South America (24); Asia (42); Oceania (2).
Data generally account for primary drug use. Polydrug use may increase totals beyond 100%. * Treatment data dating back more than 10 years were removed from the 2008 estimates and therefore caution should be taken comparing the data from 2008 with previous years.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Estimated number of illicit drug users in the past year aged 15-64 years, by region and subregion: 2008

	Cannabis users in the past year		Opiate users in the past year		Cocaine users in the past year		Amphetamines-group users in the past year		Ecstasy users in the past year	
Region/subregion	**Number (lower)**	**Number (upper)**	**Number (lower)**	**Number (upper)**	**Number (lower)**	**Number (upper)**	**Number (lower)**	**Number (upper)**	**Number (lower)**	**Number (upper)**
Africa	**27,680,000**	**52,790,000**	**680,000**	**2,930,000**	**1,020,000**	**2,670,000**	**1,550,000**	**5,200,000**	**350,000**	**1,930,000**
North Africa	4,680,000	10,390,000	130,000	540,000	30,000	50,000	260,000	540,000	*estimate cannot be calculated*	
West and Central Africa	14,050,000	22,040,000	160,000	340,000	640,000	830,000	*estimate cannot be calculated*		*estimate cannot be calculated*	
Eastern Africa	4,490,000	9,190,000	150,000	1,730,000	*estimate cannot be calculated*		*estimate cannot be calculated*		*estimate cannot be calculated*	
Southern Africa	4,450,000	11,170,000	240,000	320,000	290,000	900,000	310,000	1,090,000	220,000	420,000
Americas	**38,210,000**	**40,030,000**	**2,290,000**	**2,440,000**	**8,720,000**	**9,080,000**	**4,760,000**	**5,890,000**	**3,040,000**	**3,280,000**
North America	29,950,000	29,950,000	1,290,000	1,380,000	6,170,000	6,170,000	3,090,000	3,200,000	2,490,000	2,490,000
Central America	580,000	600,000	100,000	110,000	120,000	140,000	320,000	320,000	20,000	30,000
The Caribbean	430,000	-1,730,000	60,000	90,000	110,000	320,000	30,000	510,000	10,000	240,000
South America	7,300,000	7,530,000	840,000	870,000	2,330,000	2,450,000	1,320,000	1,860,000	510,000	530,000
Asia	**31,510,000**	**64,580,000**	**6,460,000**	**12,540,000**	**430,000**	**2,270,000**	**4,430,000**	**37,990,000**	**2,370,000**	**15,620,000**
East/South-East Asia	5,370,000	23,940,000	2,830,000	5,060,000	390,000	1,070,000	3,430,000	20,680,000	1,460,000	6,850,000
South Asia	16,490,000	27,550,000	1,390,000	3,310,000	*estimate cannot be calculated*		*estimate cannot be calculated*		*estimate cannot be calculated*	
Central Asia	1,890,000	2,140,000	340,000	340,000	*estimate cannot be calculated*		*estimate cannot be calculated*		*estimate cannot be calculated*	
Near and Middle East	7,790,000	10,950,000	1,890,000	3,820,000	*estimate cannot be calculated*		*estimate cannot be calculated*		*estimate cannot be calculated*	
Europe	**29,370,000**	**29,990,000**	**3,290,000**	**3,820,000**	**4,570,000**	**4,970,000**	**2,500,000**	**3,190,000**	**3,850,000**	**4,080,000**
West/Central Europe	20,850,000	20,990,000	1,090,000	1,370,000	4,110,000	4,130,000	1,600,000	1,710,000	2,180,000	2,190,000
East/South-East Europe	8,520,000	9,010,000	2,210,000	2,460,000	470,000	840,000	900,000	1,480,000	1,680,000	1,890,000
Oceania	**2,140,000**	**3,410,000**	**120,000**	**150,000**	**330,000**	**390,000**	**470,000**	**630,000**	**840,000**	**910,000**
GLOBAL ESTIMATE	**128,910,000**	**190,750,000**	**12,840,000**	**21,880,000**	**15,070,000**	**19,380,000**	**13,710,000**	**52,900,000**	**10,450,000**	**25,820,000**

The main drug markets

The global illicit opiate and cocaine markets represent two of the biggest transnational drugs and crime threats of our time. They appear at the same time as persistent problems from a previous era of drug control, priorities for interventions due to the severity of their impacts on affected societies and good candidates for a global solution within a reasonable time frame. Since they are both sourced from relatively concentrated production areas, most of their components are directly or indirectly linked to one another.

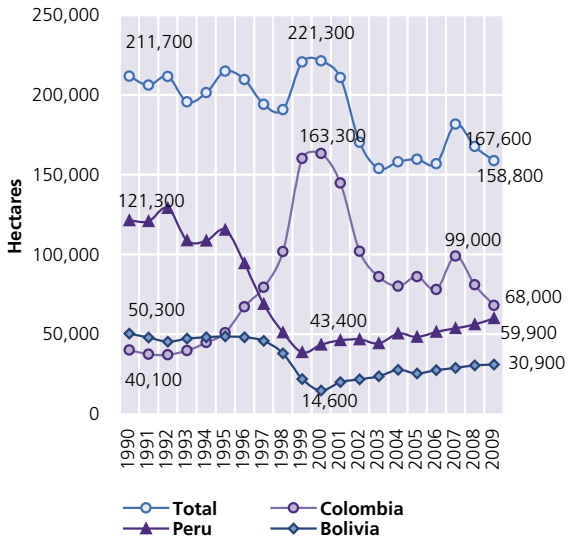
In addition, ATS have gained a large share of the global drug market over the last two decades and have come to represent a major and evolving threat for present and future drug control efforts. Since 1990, there has been a spread in ATS manufacture with more than a third of Member States having reported ATS-related manufacture activity to date. Moreover, the global number of ATS users is likely to exceed the number of opiate and cocaine users combined.

Cocaine

The global area under coca cultivation decreased by 5% last year, from 167,600 ha in 2008 to 158,800 ha in 2009. This change is mainly due to a significant decrease in Colombia, not offset by increases in Peru and the Plurinational State of Bolivia. The global area under coca cultivation declined by 28% over the 2000-2009 period. In 2009, Colombia represented about 43% of global cultivation, with Peru contributing 38% and the Plurinational State of Bolivia 19%.

Global coca bush cultivation (ha), 1990-2009

Source: UNODC



The areas where cocaine is produced, trafficked and consumed have varied substantially over time.

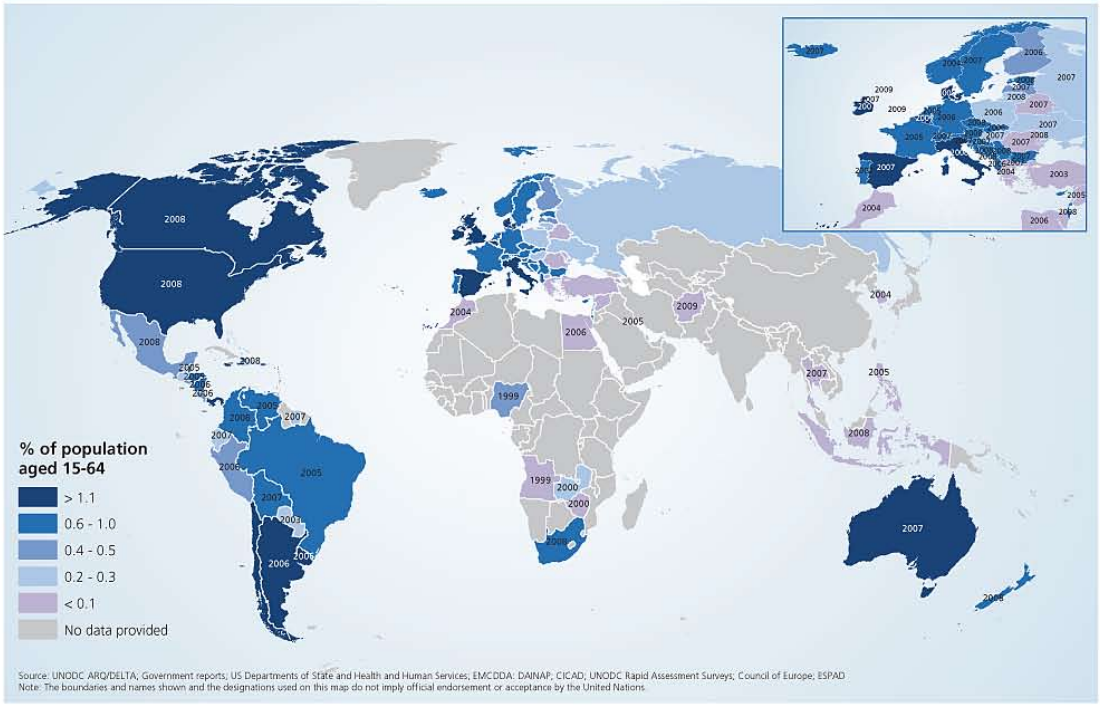
- While Colombian traffickers have produced most of the world's cocaine in recent years, between 2000 and 2009, the area under coca cultivation in Colombia decreased by 58%, mainly due to eradication. At the same time, coca cultivation increased by 38% in Peru and more than doubled in the Plurinational State of Bolivia (up 112%), while traffickers in both countries increased their own capacity to produce cocaine.
- Demand for cocaine in the United States has been in long-term decline: in 1982, an estimated 10.5 million people had used cocaine in the previous year; in 2008, the figure was 5.3 million, about half as many. In the last decade, however, the number of cocaine users in Europe doubled, from 2 million in 1998, to 4.1 million in the EU-EFTA countries in 2008. By 2008, the European market (US$34 billion) was almost as valuable as the North American market (US$37 billion). The value of the global cocaine market is estimated at around US$88 billion (estimates range from US$80 to US$100 billion).
- These shifts, combined with interdiction efforts, have also affected trafficking patterns. As the Colombian Government has taken greater control of its territory, traffickers are making more use of transit countries in the region, including the Bolivarian Republic of Venezuela and Ecuador. Mexican drug cartels emerged over the last 10 to 15 years as the primary organizers for shipments of cocaine into the United States, largely replacing the previously dominant Colombian groups. In response to Mexican enforcement efforts, Central American countries are increasingly being used as transit countries. West Africa started to be used as a way station to Europe around 2004. The situation remains fluid, and the impact on transit countries can be devastating.

In 2008, the potential production of pure cocaine amounted to some 865 mt. This is considerably less than four years previously, when almost 1,050 mt were generated. Most of these drugs are destined for consumers in North America (6.2 million users in 2008) and Europe (4 to 5 million users). These two regions, with 70% of the demand and 85% of the total value, play the main role in shaping the evolution of the global cocaine market. Another 2.7 million users are found in South America, Central America and the Caribbean.

The largest cocaine market: North America

North America is the largest regional cocaine market, with close to 40% of the global cocaine-using population. In 2008, it appears that 196 mt of pure cocaine were required to satisfy North American demand. To get this amount to the consumer (accounting for seizures,

Use of cocaine in 2008 (or latest year available)



Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA: DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

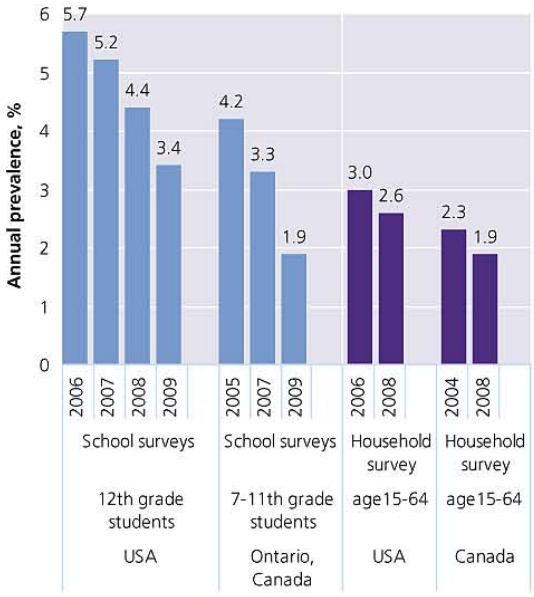
consumption in transit countries and purity), about 309 mt must have left the Andean region toward the north in 2008. This would represent about half the cocaine that leaves this region, a smaller share than in the recent past. Based on forensic testing of cocaine seized in the United States, most of the cocaine consumed in North America was produced in Colombia.

The North American cocaine market appears to be in decline. Household surveys, school surveys, forensic testing and law enforcement observation all confirm that fewer people in North America as a whole are consuming cocaine than in the past. Cocaine use in the United States has been declining for some time. The decline has been particularly pronounced since 2006, likely due to pressure on supply related to law enforcement interventions in Colombia and Mexico.

If there was a supply shortage for the United States market, this would be expected to generate an increase in cocaine prices. Street prices have not risen much, but purity has dropped greatly. When purity is taken into consideration, the cost of a gram of pure cocaine on the US market has indeed increased dramatically. Dealers in the United States apparently prefer to cut quality rather than increase price, and the result appears to have helped reduce demand.

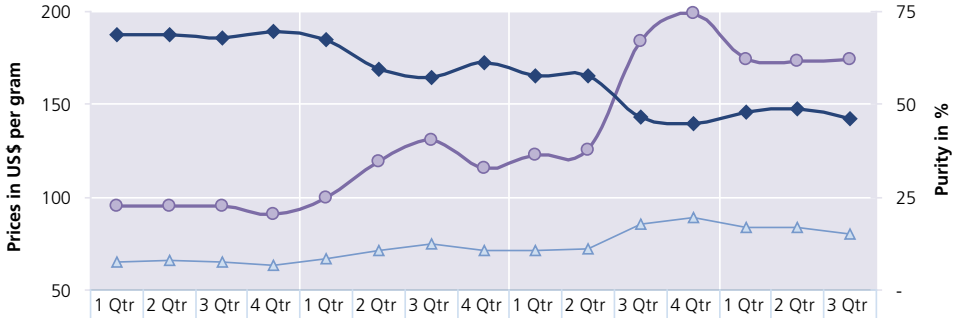
Annual prevalence rates of cocaine use in North America, 2002-2008

Sources: NIDA, *Monitoring the Future*; OSDUH, *Drug Use Among Ontario Students, 1977-2009*, SAMHSA, *Results from the 2008 National Survey on Drug Use and Health*; Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008*.



Average of all cocaine purchase prices in the United States, January 2006-September 2009

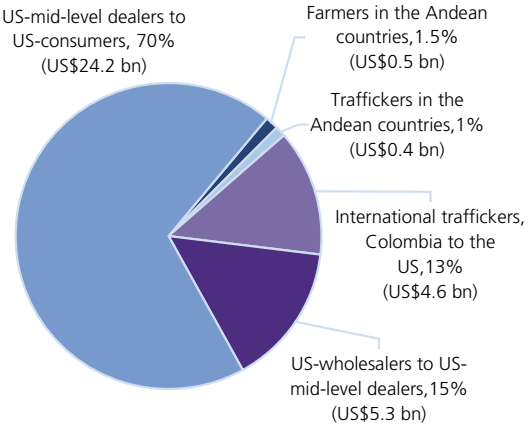
Source: US Drug Enforcement Agency



	2006				2007				2008				2009		
	1 Qtr	2 Qtr	3 Qtr	4 Qtr	1 Qtr	2 Qtr	3 Qtr	4 Qtr	1 Qtr	2 Qtr	3 Qtr	4 Qtr	1 Qtr	2 Qtr	3 Qtr
Purity adjusted prices	95.1	95.4	95.1	90.6	99.5	119.4	130.9	115.7	123.2	125.1	184.3	199.5	174.4	173.2	174.0
Unadjusted prices	65.2	65.7	64.8	63.2	67.0	70.9	74.8	70.9	71.1	71.9	85.7	89.2	83.9	84.2	80.4
Purity (in %)	68.6	68.9	68.1	69.8	67.4	59.4	57.2	61.3	57.7	57.5	46.5	44.7	48.1	48.6	46.2

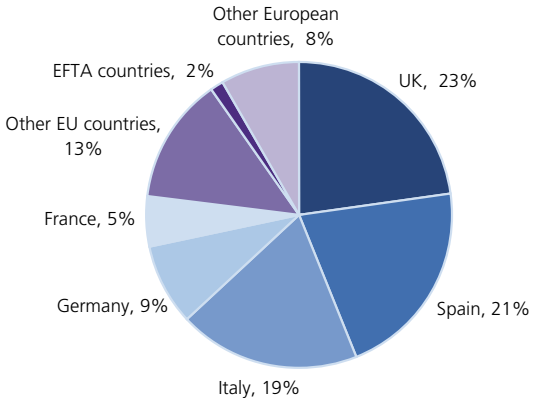
Distribution of gross profits (in %) of the US$35 billion US cocaine market, 2008

Source: UNODC



National share of the cocaine user population in Europe in 2007/2008

Sources: UNODC ARQ; Government reports; UNODC, *2009 World Drug Report*; EMCDDA, *Statistical Bulletin 2009*



As a whole, the retail value of the United States cocaine market declined by about two thirds in the 1990s, and by about another quarter in the last decade. About 70% of the profits made off the cocaine trade in the United States accrue between mid-level dealers and the consumer. Farmers and traffickers in Colombia keep less than 3% of the retail sales value of the cocaine they produce.

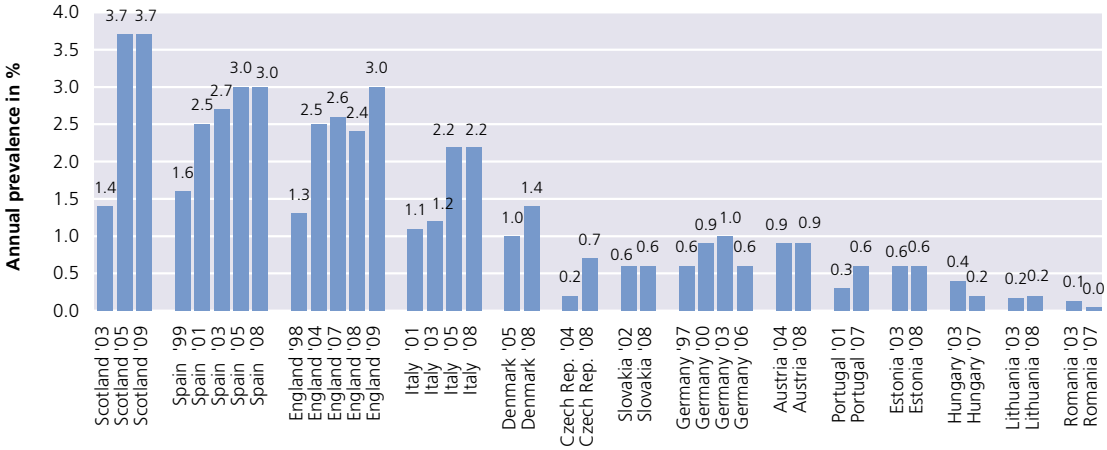
The second largest cocaine market: Europe

The world's second largest flow of cocaine is directed towards Europe, and this flow has been growing rapidly. The largest national cocaine market within Europe is the United Kingdom, followed by Spain, Italy, Germany and France. Cocaine use prevalence levels are higher in the United Kingdom and Spain than in the United States.

Recent data suggest that the rapid growth of the European cocaine market is beginning to level off in some of the biggest national markets such as Italy, Spain and Germany. Consumption is still growing in the United Kingdom and in some of the smaller European markets, however. In 2008, an estimated 124 mt of cocaine were consumed in Europe. To supply this demand, an estimated 212 mt departed South America toward Europe, about one quarter of total production. A greater share of this quantity comes from Peru and the Plurinational State of Bolivia than in the case of the United States.

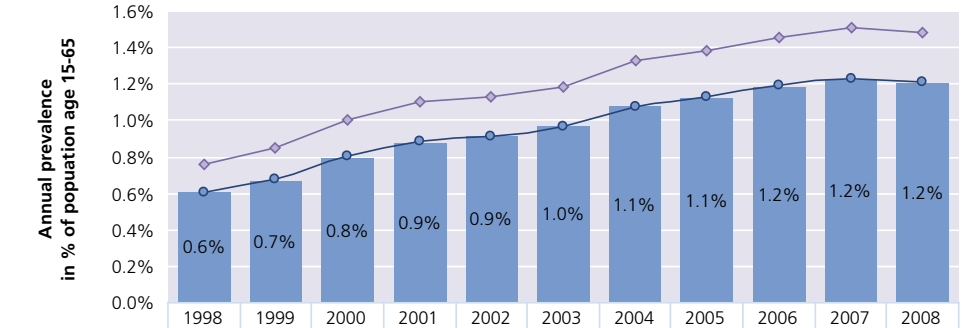
Annual prevalence of cocaine use among the adult population in selected European countries

Sources: UNODC ARQ and EMCDDA, *Statistical Bulletin 2009*



Annual prevalence of cocaine use in the EU and EFTA countries, 1998-2008

Sources: UNODC ARQ; Government reports; UNODC, *2009 World Drug Report*; EMCDDA, *Statistical Bulletin 2009*



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU and EFTA	0.6%	0.7%	0.8%	0.9%	0.9%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%
EU-27	0.6%	0.7%	0.8%	0.9%	0.9%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%
EU-15	0.8%	0.8%	1.0%	1.1%	1.1%	1.2%	1.3%	1.4%	1.5%	1.5%	1.5%

The primary countries of entry to the European market are Spain and the Netherlands. Most of the trafficking is maritime. Significant transit routes flow from former colonies or overseas territories of the European nations to their counterparts on the continent. Flows through West Africa appear to have declined since 2007, but could resume in the near future.

While the volumes are lower, the value of the European cocaine market (US$34 billion) is almost as high as in the case of the North American market (US$37 billion), because purity-adjusted cocaine retail prices are higher in Europe. European street prices in 2008 are about half what they were in 1990, but purity has declined and the dollar has weakened against the euro. In dollar terms, the purity-adjusted price of cocaine in Europe has increased since 2002.

As in the North American market, only a fraction of the retail value goes to those who produce the drug. The intercontinental traffickers receive a larger share than in the North American case, but more than half of the retail value still accrues to wholesalers and retailers within Europe.

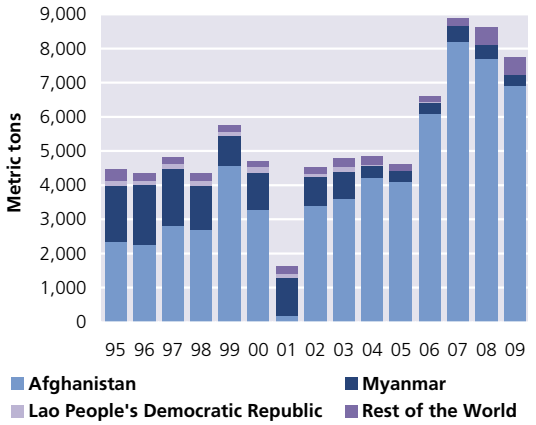
Heroin

Heroin is the most widely consumed illicit opiate in the world. It is derived from opium, which itself can have an illicit use. Of the opium that is not converted into heroin, two thirds is consumed in just five countries: the

Global potential opium production (mt), 1995-2009

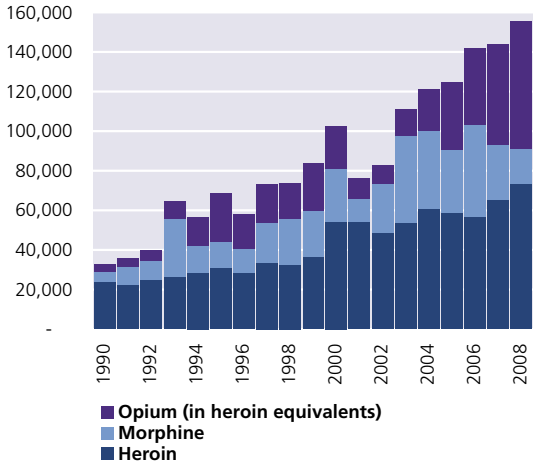
Note: The 2009 estimate for 'rest of the world' is provisional as limited information was available for some countries and regions.

Source: UNODC



Global opiate seizures in heroin equivalents, 1990-2008

Source: UNODC ARQ/DELTA



Islamic Republic of Iran (42%), Afghanistan (7%), Pakistan (7%), India (6%) and the Russian Federation (5%). Other opiates are also abused, including various poppy straw concoctions and prescription opiods, but heroin remains the most problematic opiate internationally.

With the exception of 2001, when there was hardly any opium poppy cultivation in Afghanistan, global opium production expanded remarkably in the first decade of the twenty-first century until 2007, apparently with no commensurate expansion in demand. Opium production subsequently declined over the 2007-2009 period (from 8,890 to 7,754 mt), though remaining significantly above estimated global demand (some 5,000 mt for consumption and seizures). The declining farm-gate price of opium in Afghanistan in recent years has been more pronounced than the decline in heroin prices. This may reflect a number of factors, including rising prices for heroin precursors (particularly acetic anhydride) in that country and a build-up of stocks of opium not processed into heroin.

Although Afghanistan is the source of most of the world's illicit opiates (6,900 mt of opium or 89% of the world total in 2009), significant quantities are also produced in Myanmar (330 mt) and Latin America (notably in Mexico and Colombia). Since 2003, Mexico has been the world's third largest source of opium, and the quantities produced in 2008 (325 mt) came close to the quantities produced in Myanmar in 2009.

There are indications that the downward trend in global opium production over the 2007-2009 period will continue in 2010. Early indications for 2010 (as revealed in UNODC's *Afghanistan Opium Winter Rapid Assessment*) suggested that the area under opium cultivation in Afghanistan could remain basically stable, but yields will likely decline due to a blight.

Both opium and heroin seizures continued to increase in 2008. Morphine seizures, however, continued the declining trend started in 2007. Although heroin seizures have followed a generally increasing trend since 2002, they have been outpaced by the growth in global opium seizures, possibly reflecting difficulties faced by Afghan laboratory operators to obtain sufficient precursor chemicals to transform the large quantities of harvested opium into heroin. Most of the opium seizures continue to be made in the Islamic Republic of Iran, neighbouring Afghanistan. The global rise in opium seizures thus largely reflected the growing opium seizures made by the authorities in the Islamic Republic of Iran.

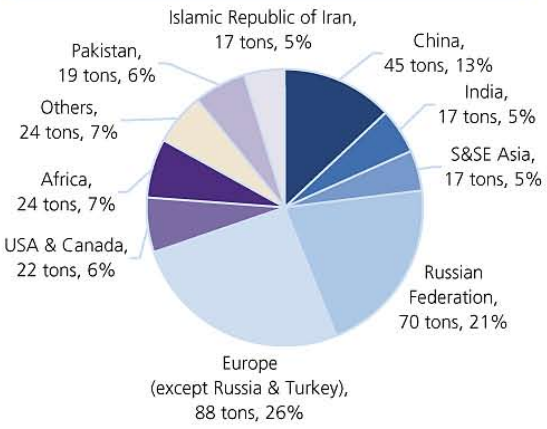
The world's two largest markets for Afghan opiates are the Russian Federation and West Europe, which together consume almost half the heroin produced in the world. About 340 mt of heroin is estimated to have been consumed globally in 2008. To meet this demand, accounting for seizures, some 430 mt would have had to be produced. UNODC estimates suggest that about 380 mt were produced out of Afghan opium that year, supplying the bulk of global demand.

The largest heroin market: West Europe

The world's largest heroin market is West Europe, and about half of this market is contained in just three countries: the United Kingdom, Italy and France. Heroin use appears to be decreasing in most West European countries, although the harms associated with heroin use seem to be increasing, as reflected in heroin-induced deaths.

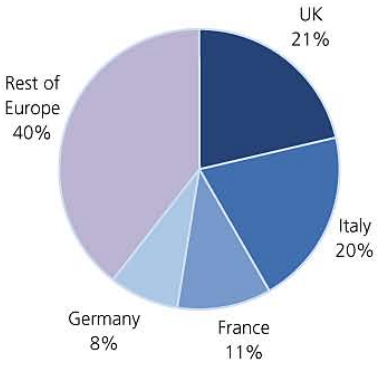
Global heroin consumption (340 mt), 2008

Source: UNODC

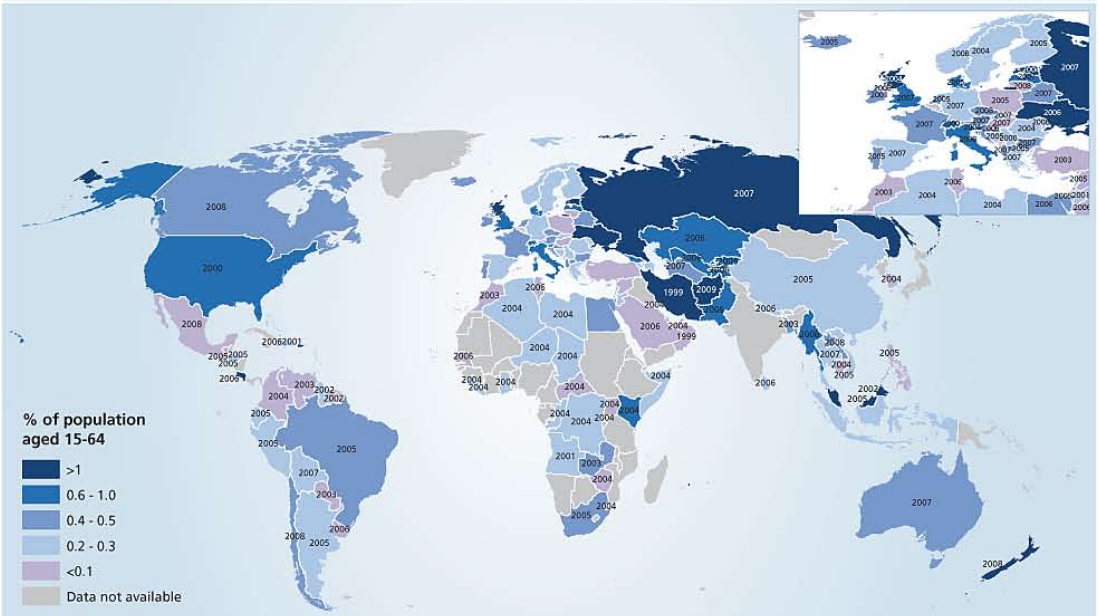


Estimated heroin consumption distribution in West Europe, 2008 (total 85 mt)

Source: UNODC



Use of opiates including heroin, 2008-2009 (or latest year available)



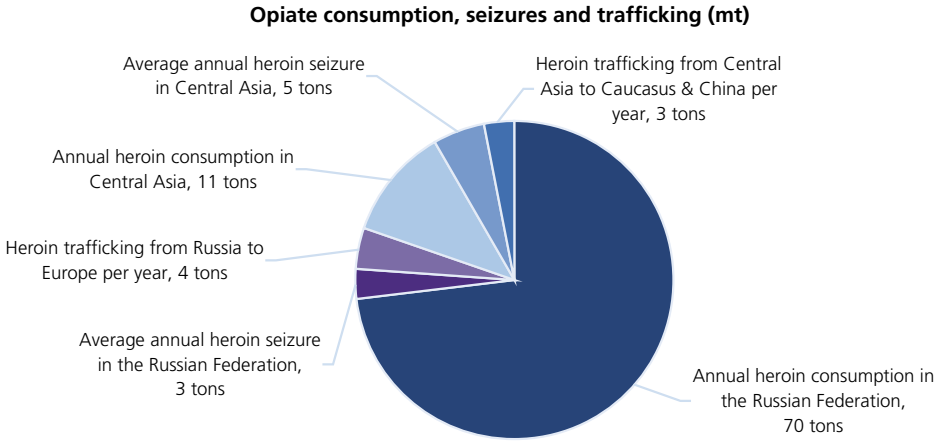
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations
Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA: DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD

Most of the heroin dispatched from Afghanistan to West Europe proceeds overland along the so-called 'Balkan route', transiting the Islamic Republic of Iran (or Pakistan to the Islamic Republic of Iran), Turkey and the countries of South-East Europe. It is estimated that 37% of all Afghan heroin, or 140 mt, departs Afghanistan along this route, to meet demand of around 85 mt. Most of the heroin interdicted in the world is seized along this route: between them, the Islamic Republic of Iran and Turkey were responsible for more than half of all heroin seized globally in 2008.

The total quantity of heroin seized in Europe, as reported by some 43 countries, was around 7.6 mt in 2008, which is only a fifth of the amount seized in Turkey and the Islamic Republic of Iran in 2008. In all, three countries – the United Kingdom (18%), Italy (14%) and Bulgaria (13%) – accounted for almost half of the total amount seized in the EU and EFTA countries in 2008. Across Europe, many countries directly straddling the main heroin trafficking routes reported rather low levels of heroin seizures in 2008, such as Montenegro (18 kg), Bosnia and Herzegovina (24 kg), the Former Yugoslav

Distribution of the heroin market on the Northern route, 2000-2008

Source: UNODC



Republic of Macedonia (26 kg), Hungary (28 kg), Albania (75 kg), Austria (104 kg), Slovenia (136 kg), Croatia (153 kg) and Serbia (207 kg).

Wholesale prices of heroin (not adjusted for purity) increase along the trafficking route from South-West Asia to Europe. In 2008, wholesale prices ranged from less than US$3,000 per kg in Afghanistan to US$10,300-US$11,800 per kg in Turkey and an average of US$44,300 per kg in West and Central Europe.

The second largest heroin market: the Russian Federation

Some 25% of all Afghan heroin (95 mt) is trafficked each year from Afghanistan into Central Asia to meet a demand of some 70 mt in the Russian Federation, along the 'Northern Route'. The number of opiate users in the Russian Federation is estimated at between 1.6 and 1.8 million people, equivalent to a prevalence rate of 1.6% of the population aged 15-64. There is a very high prevalence of HIV among drug users (some 37%).

To exit Afghanistan on the way to the Russian Federation traffickers can choose between three countries: Tajikistan, Uzbekistan and Turkmenistan. Most of the flow appears to proceed through Tajikistan to Osh in Kyrgyzstan, before transiting Kazakhstan to the Russian Federation. Trafficking is conducted mostly in private and commercial vehicles, often in relatively small amounts. Of 45 heroin seizures above 500 grams (a commercial quantity) made in Tajikistan between 2005 and 2007, 80% amounted to 10 kg or less, and of these, the average size was 2.6 kg. This is a rather small amount per seizure when compared to other regions, suggesting that small-scale trafficking operations are the rule rather than the exception.

While total seizures remained essentially stable in Tajikistan in 2008 (1.6 mt), seizures in Uzbekistan and Kazakhstan reached the highest levels on record, at 1.5 mt and 1.6 mt, respectively. In the Russian Federation, seizures have followed an upward trend, from 2.5 mt in 2006, to 2.9 mt in 2007 and to 3.4 mt in 2008.

Trafficking through Pakistan

Some 150 mt (40%) of Afghan heroin/morphine are trafficked to Pakistan, particularly to Balochistan province and the Federally Administered Tribal Areas, which both share long borders with Afghanistan. While some of the drugs are consumed or seized in Pakistan, most are trafficked to other countries. Major destinations for heroin trafficked through Pakistan include the Islamic Republic of Iran (35 mt, most for onward shipment to Europe), various countries in Asia (25 mt), Africa (some 20 mt) and the United Arab Emirates (11 mt for onward shipment to China and East/Southern Africa). Pakistani traffickers also operate numerous air (and sea) trafficking routes to Europe, mostly to the United Kingdom and the Netherlands, shipping an estimated 5 mt annually via these direct connections.

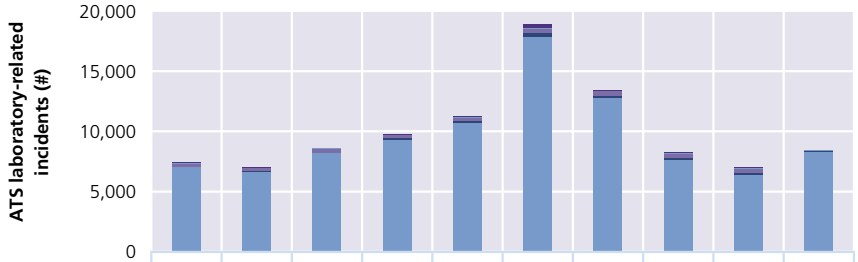
Amphetamine-type stimulants

Amphetamine-type stimulants (ATS) refer to a group of synthetic substances comprised of amphetamine-group (primarily amphetamine, methamphetamine and methcathinone) and ecstasy-group substances (MDMA and its analogues). ATS can be made anywhere the precursors can be found, so manufacturing tends to happen close to the main consumer markets. More than one third of the countries reporting to UNODC have detected ATS manufacture in their territories.

The number of ATS-related clandestine laboratories reported increased by 20% in 2008, and, for the first

ATS laboratories (all sizes) reported to UNODC, by type, 1999-2008

Source: UNODC ARQ



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
ATS lab total	7,412	7,028	8,598	9,782	11,258	18,874	13,467	8,271	7,002	8,408
Other synthetic stimulants	68	19	5	24	70	282	92	51	35	1
Ecstasy group	62	64	70	59	49	87	63	56	72	53
Combined ATS	204	221	272	244	314	330	370	361	344	15
Amphetamine	59	115	85	132	161	322	159	154	102	44
Methamphetamine	7,019	6,609	8,166	9,323	10,664	17,853	12,783	7,649	6,449	8,295

time, revealed the existence of laboratories in Argentina, Brazil, Guatemala, the Islamic Republic of Iran and Sri Lanka. Information on the 8,432 detected laboratories came from 31 countries, with the largest numbers reported from the United States, the Czech Republic, Australia, China,[4] Slovakia, New Zealand, the Netherlands, Canada and Mexico. However, the number of laboratories is not representative of their output, as many countries with lower total counts report only laboratories with large-scale outputs.

Traditionally, different regions have had problems with different ATS. 'Ecstasy' has been associated with the dance club scene, initially located primarily in the Anglophone countries, but later expanding throughout Europe, the Americas, the Oceania region and many parts of East and South-East Asia. Methamphetamine has been problematic in East Asia and South-East Asia over the last decade, as well as in North America and Oceania. Amphetamine was found primarily in Europe, though in recent years, the Middle East has emerged as a major new market, with demand for pills called *Captagon.* This was a brand-name for a discontinued product that contained fenethylline, but these pills today mostly consist of amphetamine and caffeine. Pharmaceutical stimulants are widely misused in South America and in Africa.

Trends and associations with these substances are also changing:

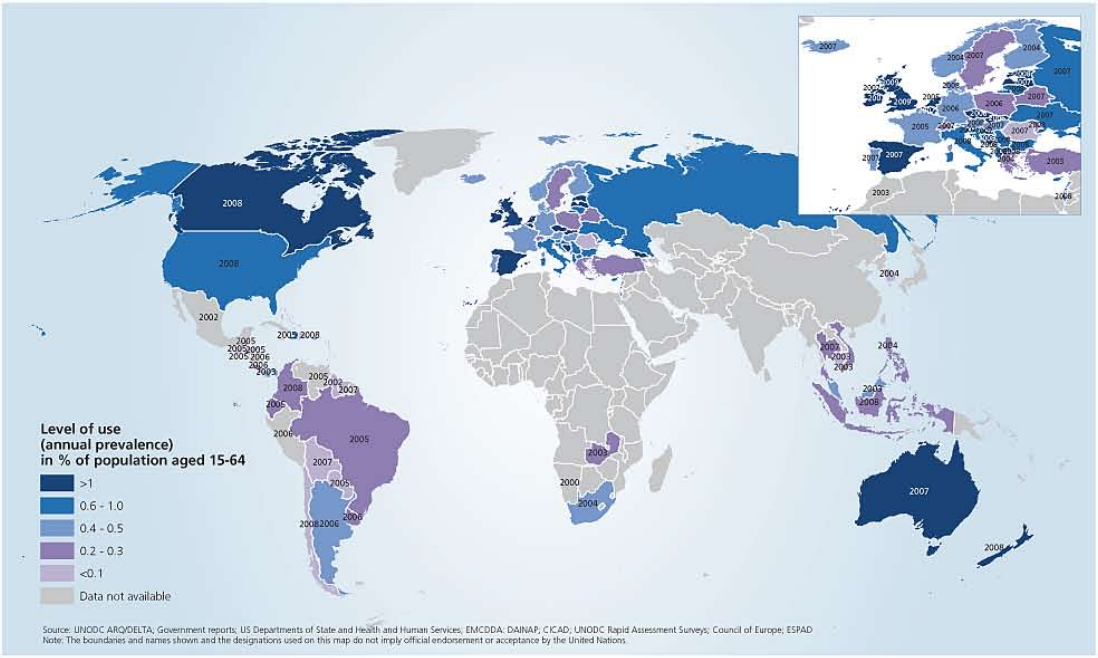
- North America struggled with a rash of methamphetamine use, gradually moving from the west towards the east coast. Successes in precursor control, however, seem to have reduced this threat, though seizures increased in 2009.
- 'Ecstasy' is becoming important in many parts of the developing world, including Asia, while it seems to be levelling off or declining in Europe. The situation remains dynamic with illicit ecstasy manufacturing emerging in new locations around the world, while European and other markets are increasingly discovering synthetic substitution psychotropic substances in tablets sold as ecstasy. Piperazines, ketamine and other substitutes, either marketed as 'ecstasy' or under their own name, have grown in popularity as club drugs. With these changes in demand, the location of manufacturing operations has changed. In the past, most of the pills sold as 'ecstasy' were manufactured in Europe, but this does not seem to be the case any longer. Manufacture of 'ecstasy' has increased in North America (notably in Canada) and in several parts of Asia. In line with the increases in manufacture in Canada, there are now also early signs that the strong downward trend in ecstasy use in North America after the year 2000 could be reversed.

ATS are seized in a wider range of countries and greater volumes than ever before. A key component of the volume increase is the growth in the seizures of pills branded as *Captagon*. In the more mature markets, however, ATS use appears to have stabilized or declined, and seizures of tablets containing ecstasy-group substances in Europe have plummeted since 2006.

These broad trends mask a number of important regional developments. Manufacture of methamphetamine for the United States market, for example, underwent a dramatic transformation in response to domestic precursor controls implemented in 2005. Manufacturing was displaced over the border to Mexico. This displacement was

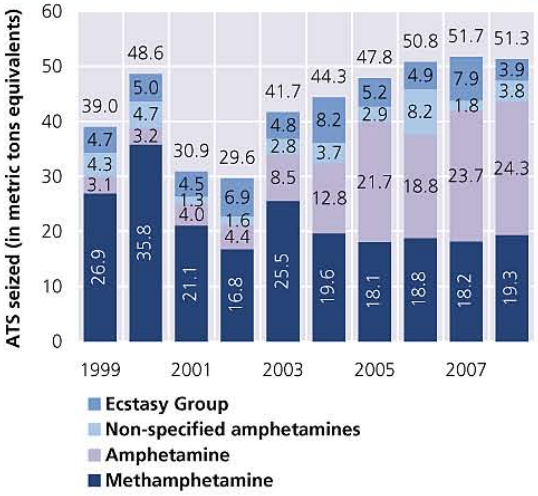
4 In 2008, China reported 244 unspecified clandestine laboratories. However, this figure is also known to included some opium dens and was therefore not included in the ATS totals.

Use of ecstasy in 2008 (or latest year available)



Seizure trends of ATS, by type, 1999-2008

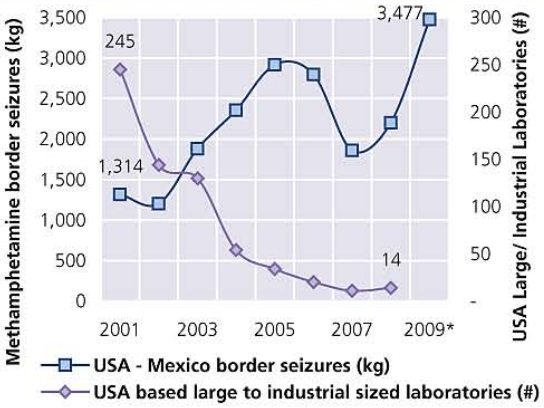
Source: UNODC ARQ/DELTA



United States seizures of methamphetamine reported near the Mexico border versus seizures of large-scale US-based clandestine methamphetamine laboratories, 2001-2009*

* Partial year 2009

Source: UNODC

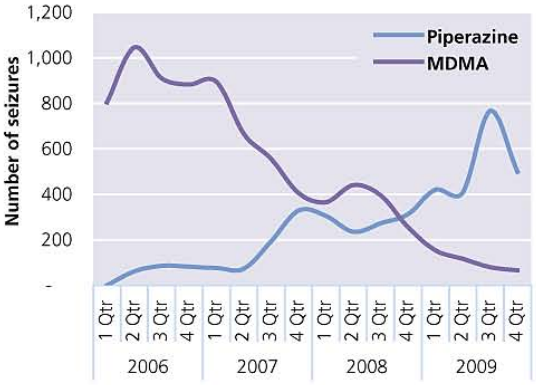


later addressed by precursor controls in Mexico initiated in 2007. In response to these efforts, prices in the United States rose and purity declined. But there are indications that the traffickers are adapting yet again, identifying new sources of precursors, new techniques for synthesizing the drug, and new countries in which to locate manufacture. From the end of 2007 until the beginning of 2009, the purity of methamphetamine sold in the United States appears to have increased, resulting in a decline in the price per gram of pure methamphetamine. This situation appeared to have stabilized by late 2009.

Traffickers have adapted to measures to control 'ecstasy' manufacture as well. Traditionally, Europe has been the source of most of the 'ecstasy' used in the world, but manufacturing operations are increasingly detected in other regions, catering to demand in an expanding number of countries. Alternative precursors, including safrole-rich oils from South-East Asia, are increasingly

The composition of 'ecstasy' tablets seized in the United Kingdom, 2006-2009

Source: United Kingdom Forensic Science Services



detected in MDMA manufacture, and substitute drugs, particularly the piperazines, are used to mimic the effects of MDMA. Some of these substitute chemicals are not under international control and are not regulated in all jurisdictions.

Another drug outside international control, with growing popularity in Asia, is the veterinary anaesthetic ketamine. Most of this drug is diverted from licit sources, but large-scale illicit manufacturing has been detected in Asia. Seizures have been made in the hundreds of kilograms, and the price has remained low relative to other drugs.

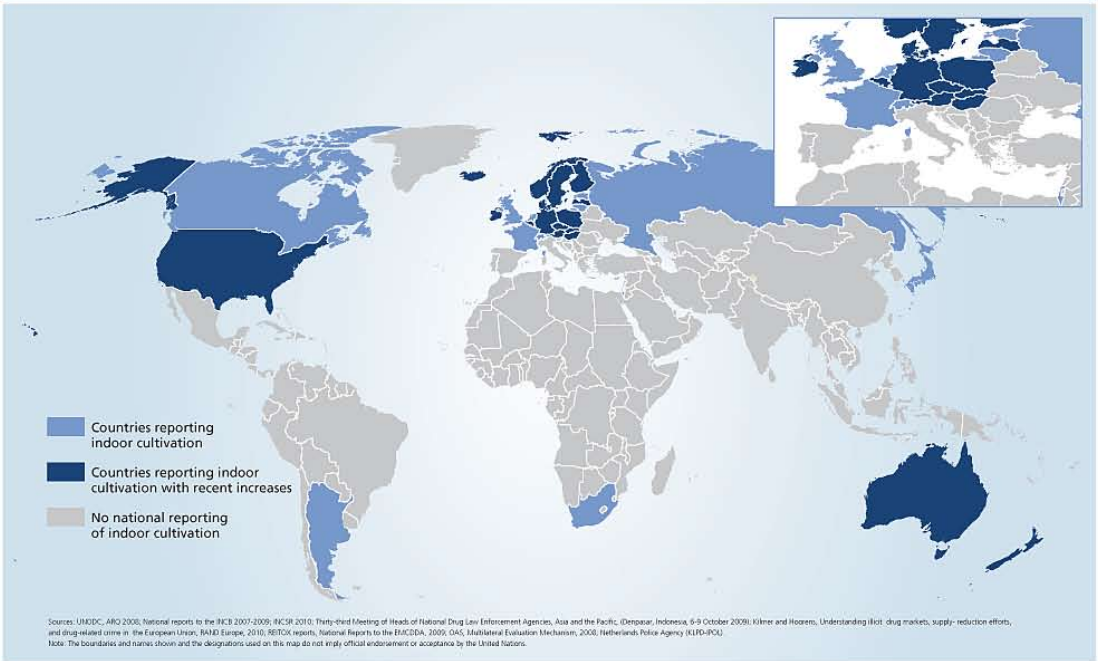
Cannabis

In contrast to the major international markets described above, very little can be said about global cannabis trends, because the drug is produced locally and consumed widely in countries around the world. Cannabis resin markets are more concentrated than those for herbal cannabis, with Afghanistan and Morocco being the largest international exporters. The area under cannabis cultivation in Morocco declined from 134,000 ha in 2003 to 72,500 ha in 2005 and production fell from 3,070 mt to 1,067 mt. Since 2005, UNODC has not carried out a cannabis survey in Morocco. However, the Government of Morocco has reported decreases after 2005. Data on seizures of cannabis resin originated in Morocco and reported by destination countries do not show a decreasing trend and Morocco continues to appear as one of the major sources of resin. The Afghan production was assessed at between 1,500 and 3,500 mt in 2009 (with estimates of the area under cannabis cultivation ranging from 10,000 to 24,000 ha). Cannabis resin seizures in the Near and Middle East/South-West Asia more than doubled after 2006.

The most notable global trend in cannabis production in recent years has been the growth of indoor cultivation, especially in Europe, Australia and North America. Indoor growing is a very lucrative business and is increasingly a source of profit for local organized crime groups.

Seizures of both cannabis herb and resin reached record levels in 2008. Cannabis herb is the most prevalent of

Evidence of indoor cannabis cultivation in the world

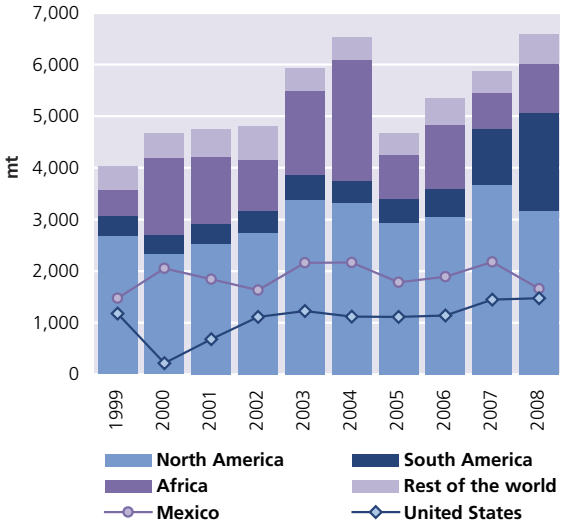


Sources: UNODC, ARQ 2008; National reports to the INCB 2007-2009; INCSR 2010; Thirty-third Meeting of Heads of National Drug Law Enforcement Agencies, Asia and the Pacific, (Denpasar, Indonesia, 6-9 October 2009); Kilmer and Hoorens, Understanding illicit drug markets, supply- reduction efforts, and drug-related crime in the European Union, RAND Europe, 2010; REITOX reports, National Reports to the EMCDDA, 2009; OAS, Multilateral Evaluation Mechanism, 2008; Netherlands Police Agency (KLPD-IPOL)
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

the two, with total seizures reaching 6,587 mt, whereas the resin seizure total was 1,637 mt in 2008. Cannabis herb seizures appear to be growing most strongly in South America; in particular in the Plurinational State of Bolivia. For resin, the growth is strongest in South-West Asia. The year 2008 saw what may be the single largest drug seizure in history: 236.8 mt of cannabis resin seized by the Afghan authorities in Kandahar province in June.

Global cannabis herb seizures (mt), 1999-2008

Source: UNODC ARQ



Prices of cannabis herb vary noticeably across different countries and regions, even when adjusted for purchasing power parity. Some regions revealed intra-regional consistency, although comparisons across countries should be considered with caution since prices may relate to different product types. Very high retail prices were reported by Japan, Singapore and two territories in Eastern Asia (Hong Kong and Macao, China). The high price in Japan may be due to the fact that cannabis herb is mainly imported, which is contrary to the prevalent pattern in most other countries. Cannabis herb prices in Europe were also relatively high. The lower end of the scale was occupied mainly by countries in Africa, South America and East, South-East and South Asia.

Cannabis remains the most widely used illicit substance in the world. Globally, the number of people who had used cannabis at least once in 2008 is estimated between 129 and 191 million, or 2.9% to 4.3% of the world population aged 15 to 64. Cannabis use appears to be in long-term decline in some of its highest value markets, including North America and parts of West Europe. Increasing use has been reported in South America, although annual prevalence rates remain far lower than in North America. Although there is a lack of scientifically valid data on cannabis use for both Africa and Asia, national experts in both continents perceive an increasing trend.

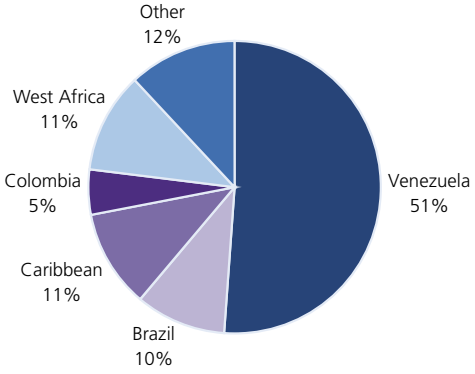
Drug trafficking and instability in transit countries

There are two ways that drug trafficking can pose a threat to political stability. The first involves countries where insurgents and illegal armed groups draw funds from taxing, or even managing, drug production and trafficking. The second concerns countries that do not face such a situation, but where the drug traffickers become powerful enough to take on the state through violent confrontation or high-level corruption. This chapter focuses on the second category, and discusses the impact of cocaine trafficking on transit countries.

Between 2006 and 2008, over half the maritime shipments of cocaine to Europe detected came from the Bolivarian Republic of Venezuela. Ecuador has also been affected by an increase in transit trafficking, and both countries are experiencing increasing problems with violence.

Departure locations of identified drug trafficking shipments by sea from South America to Europe, 2006-2008

Source: Maritime Analysis Operation Centre

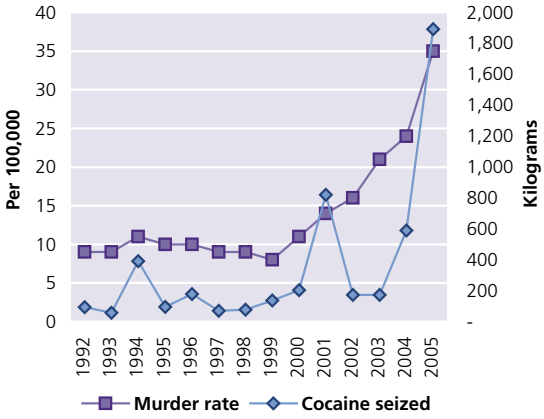


The decline of the US cocaine market and the rise of the European one have also contributed to violence in the Caribbean. In some cases, this is due to new cocaine flows, in others, to the loss of cocaine trafficking as a revenue source for local criminals. It appears that any dramatic changes in trafficking can have a destabilizing effect, resulting in violence.

The region worst affected at present is the Northern Triangle of Central America: Guatemala, Honduras and El Salvador. Here, intense drug-related violence has posed a serious challenge to governance. While all these countries have had problems with violence in the past,

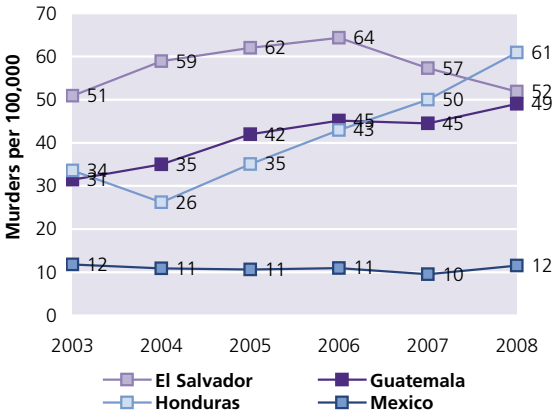
Murders and cocaine seizures in Trinidad and Tobago, 1992-2005

Source: UNODC International Homicide Statistics and DELTA



Murder rate trends in Central America (per 100,000 inhabitants), 2003-2008

Source: UNODC International Homicide Statistics



the murder rate is highest not in the largest urban areas but in those parts of the country particularly affected by the drug trade, including some ports and border areas.

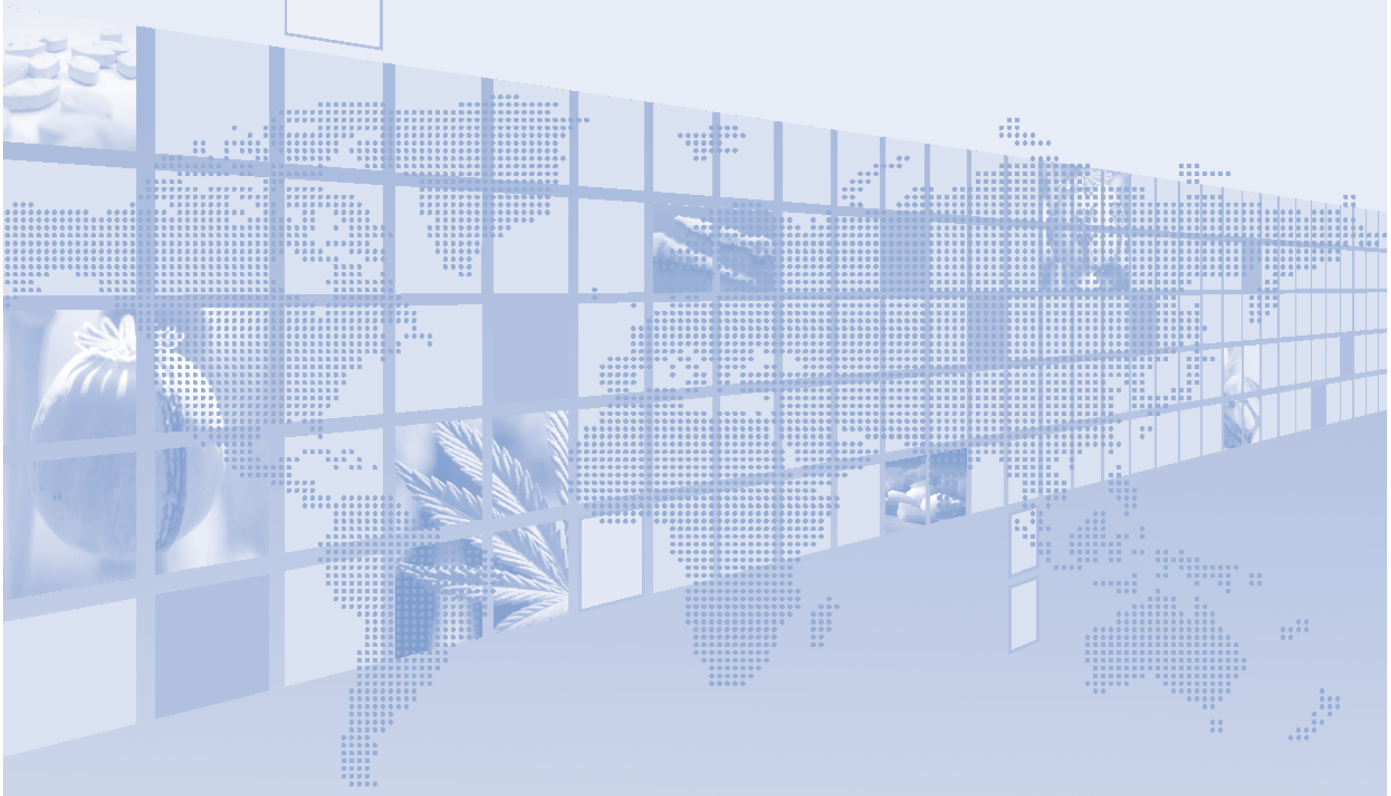
Much has been made of drug-related violence in Mexico, but murder rates are considerably lower and the Government is far stronger in Mexico. The crackdown on the Mexican cartels has inflamed violence, as it did in Colombia, but this phase may be necessary to dismantle organized crime groups that have begun to challenge the state. It appears to have disrupted the cocaine supply to the United States, but more importantly, it has uprooted widespread corruption and reasserted Government control over the entire territory of the country. Since much of the drug violence in Central America is tied to these same cartels, progress in Mexico should also aid the countries to the south.

On the other side of the Atlantic, large-scale cocaine trafficking has been a problem in West Africa since around 2004. While data on violence are sparse in West Africa, it is unlikely that the flow of drug money will precipitate the kind of feuds that have been recently seen in Latin America, because the traffickers have been able to co-opt top figures in some authoritarian societies.

The best known example is Guinea-Bissau, where the prime minister was recently detained and threatened by soldiers so that the chief of staff of the military could be removed. The man who engineered this 'coup' has assumed the role of deputy chief. He has also been widely accused of involvement in drug trafficking. While the flow of cocaine through this region declined sharply after political turmoil in Guinea-Bissau and Guinea in 2008/2009, these recent developments suggest it may resume in the near future.

Measures must be taken to assure that transnational organized crime does not contribute to instability, including, when relevant, building crime prevention into international efforts to foster peace and the rule of law. Since most transnational trafficking flows are intercontinental, however, planning of integrated drug control strategies at the global level is required to address them, and the United Nations can help to coordinate this endeavour.

1. TRANSNATIONAL DRUG MARKET ANALYSIS



1.1 Introduction

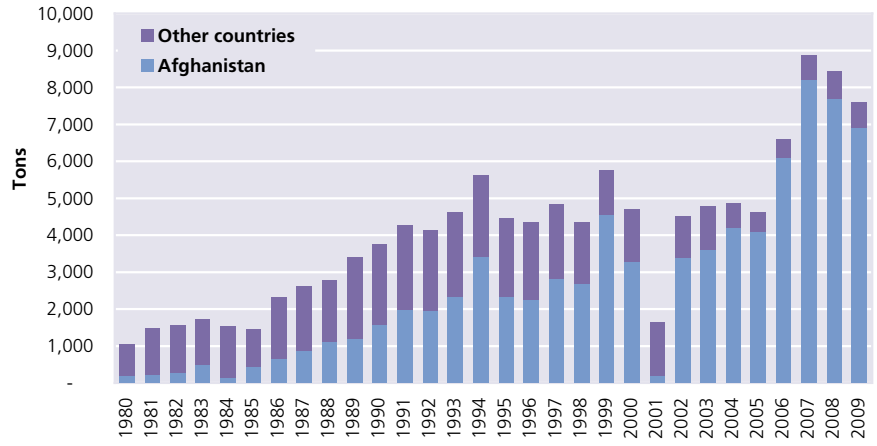
Since the 1960s, and in a context of rapid and deep socioeconomic changes throughout the world, the international drug control system has succeeded in containing the spread of annual illicit drug use to around 200 million people, or 5% of the world population aged 15-64. This compares very favourably with the much higher prevalence of tobacco use, which causes 5.4 million deaths per year.[1]

The system was set up to restrict the use of controlled drugs to medical and scientific purposes and, while containment of illicit use to relatively low levels is already a remarkable achievement, Member States have always had a more ambitious goal in mind.

In 1998, 37 years after the 1961 Single Convention, a special session of the UN General Assembly (UNGASS) decided to work towards the "elimination or significant reduction" of illicit drug production and abuse by 2008,[2] and adopted a series of sectoral plans to reach that objective. Gathered at the end of the 10-year period, Member States were not satisfied with the results and declared that they were still "gravely concerned about the growing threat posed by the world drug problem."[3] There is no single measure of the year-on-year evolution of the world drug problem. There is not even a clear definition of what is meant by the expression the 'world drug problem'. Since public health is at the heart of the international drug control system, the prevalence of illicit drug use is generally considered a central, though imperfect, indicator of the status of the problem. Illicit drug use is a multifaceted issue, however. In particular, different drugs produce different effects and present different risks to users. At the international level, annual prevalence of drug use, by drug category, has thus become the most standardized indicator to monitor the evolution of illicit drug use. Unfortunately, only a minority of countries have adequate national prevalence monitoring systems in place. Producing a precise, reliable and sensitive measure of the evolution of the world drug problem over the last decade on that basis is therefore very difficult. Data on illicit drug supply can help fill the information gap, at least for some drugs. The bulk of cocaine and opium production is concentrated in a few locations and successful efforts to develop annual surveys in the

Fig. 1: Global potential opium production, 1980-2009

Source: UNODC



1998-2009:+ 78% in the world

1998-2009:+156% in Afghanistan

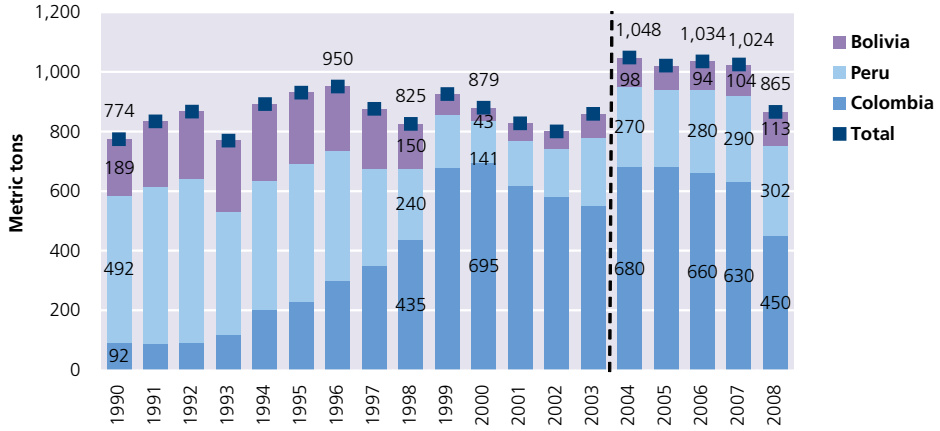
1 WHO, *Tobacco key facts* (see: http://www.who.int/topics/tobacco/facts/en/index.html).

2 United Nations General Assembly Special Session on the World Drug Problem (UNGASS), New York, 8-10 June, 1998 (A/S-20/4, chapter V, section A).

3 High-level Segment to the 2009 United Nations Commission on Narcotic Drugs, *Political Declaration and Plan of Action on International Cooperation towards an Integrated and Balanced Strategy to Counter the World Drug Problem,* March 2009 (E/2009/28 - E/CN.7/2009/12).

Fig. 2: Global potential cocaine production (mt), 1990-2008

Source: UNODC



context of the 1998 Plan of Action have provided a coverage that is systematic enough to closely follow the evolution of the global opiate and cocaine markets from the supply side.

Data on illicit opiates supply, arguably the most problematic drug category and always a core preoccupation of the international drug control regime, show that global opium production increased by close to 80% between 1998 and 2009. Increases in Afghanistan more than offset remarkable declines in South-East Asia during that period. There were encouraging declines in the last three years, but Afghan production was still more than 150% higher in 2009 than in 1998. With strong increases after 2005, production seems to have well exceeded world demand and led to the creation of large stockpiles, but it is clear that the global opiate market has not been eliminated, or significantly reduced, since 1998.

The evolution of cocaine production has not been as dramatic as in the case of opium during the same decade. Contrasting trends were recorded in various locations, including a long-term decline of use in North America but an increase in Europe, reductions in production in Colombia and increases in Peru or the Plurinational State of Bolivia. At the global level, these changes essentially amounted to geographical shifts and displacements in supply and demand. As a whole, the market has not been eliminated or significantly reduced over the last decade.

Data on cannabis and amphetamine-type stimulants are too patchy to allow year-on-year monitoring of the global market, but there were no indications of large reductions at the global level for these substances either.

Member States have decided to continue their efforts to achieve the initial UNGASS objective. Accordingly, illicit drug supply and demand should be "eliminated or significantly reduced" by 2019. Their decision was made in a context of renewed criticism from some parts of civil society against the international drug control system and its perceived inefficacy, but governments were remarkably unanimous in their perception of the world drug problem, in the renewal of their political commitment to the international policy framework, and in their resolve to address shortcomings and obtain better results.

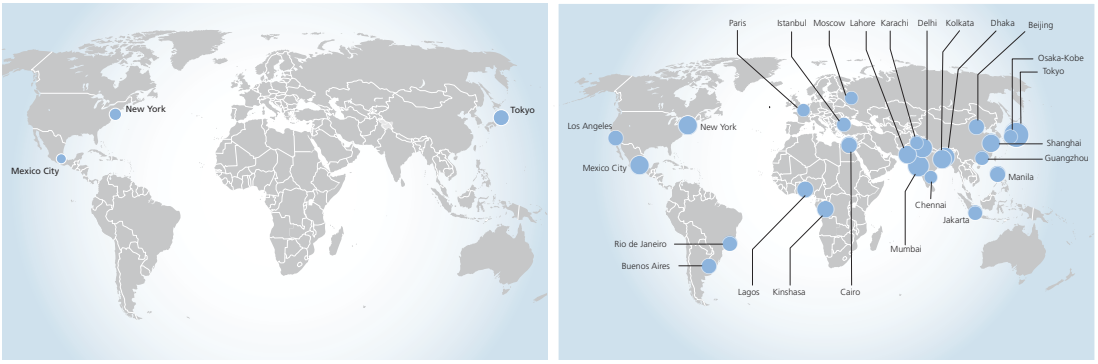
Can overall drug supply and demand be "eliminated or significantly reduced" by 2019, as called for by the Member States? At the national level, one can hope that many countries will be able to significantly improve their drug control situation within a decade. There are a number of encouraging developments in this respect. Will these local successes translate into an overall improvement at the global level?

The increase in world population alone (by some 0.8 billion people, or 11%) during the next decade should automatically increase the size of world drug markets, even if drug use prevalence rates remain constant. The potential impact of other risk factors such as urbanization (+20% during the next decade) and the growth of mega-cities in the developing world could make matters worse, as drug use is typically higher in urban than in rural areas.

As regards cannabis, there is no global market per se to control and monitor. The global picture is made up of a patchwork of multiple and distinct submarkets, typically national or regional in nature. Monitoring their evolution and addressing them as a whole may thus neither be the easiest, nor necessarily the most useful, thing to

Fig. 3: Cities with more than 10 million inhabitants in 1975 (left) and 2025 (right)

Source: UN DESA



do. Monitoring systems are largely missing, and current methods used to estimate the size and evolution of the global cannabis problems are not sensitive. That creates a serious technical problem for any attempt to closely monitor, guide and measure a global elimination approach. There are additional obstacles. Cannabis production and -consumption are found everywhere and there is no longer a clear consensus among national authorities on how to tackle the issue. Under these conditions, a significant reduction of the aggregate cannabis problem at the global level by 2019 would more likely be a matter of coincidence than the result of internationally concerted action. Even if such a reduction were to occur, it would be difficult to detect and reliably measure it, given the lack of a clear baseline and persistent data gaps.

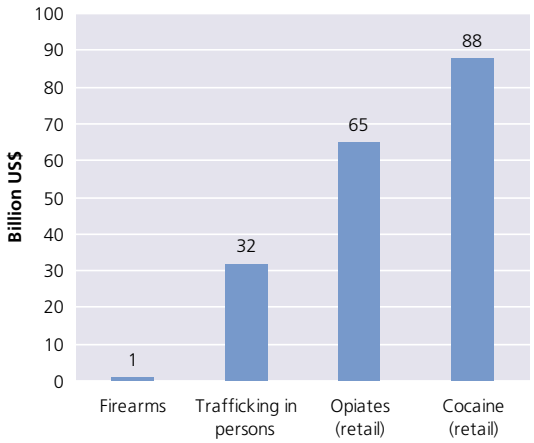
Unlike for cannabis, there is a clear political consensus on heroin, cocaine and, to a large extent, amphetamine-type stimulants (ATS). In the case of ATS, because of the existence of independent, mostly regional or even national, supply and demand markets, as well as the ease, discretion and changing nature of synthetic drugs manufacture, the problem also tends to defy a global approach and overall predictions over the period considered. Nevertheless, ATS have gained a large share of the global drug market over the last two decades and have come to represent a major and evolving threat for present and future drug control efforts. Since 1990, ATS manufacture has spread, with more than a third of Member States reporting this activity on their territory. Moreover, the global number of ATS users is likely to exceed the number of opiate and cocaine users combined. These drugs require international vigilance, the adoption or strengthening of specific regulations and control measures at the global level, and the development of strong regional strategies.

Cannabis

is - by far - the most widely produced, seized and consumed drug worldwide, causing increased health problems in many countries, linked to its spread and rising potency in several (mostly developed) countries over the last decade. Deaths related to cannabis use are rare, however, and dependency tends to emerge only after long periods of use. As cannabis production is widespread, most of its production is intended for local or regional consumption. Overseas trafficking in cannabis is less frequent and appears to have further lost importance with the development of high-potency cannabis production in greenhouses in the industrialized countries. The role of transnational organized crime groups in the cannabis market is thus more limited than for other drugs, and so are the security threats related to its production, trafficking and consumption.

Fig. 4: Estimated annual value of some global criminal markets in the 2000s

Source: UNODC



The impact of illicit opiates, cocaine and ATS

Opiates are the most severe problem drugs worldwide, notably in Asia and Europe. Their use can lead to severe dependence and is often associated with IDU-related HIV/AIDS and hepatitis B and C, as well as high mortality rates. The mortality rate for dependent heroin users is between 6 and 20 times that expected for those in the general population of the same age and gender, as the difference between a 'recreational dose' and a 'fatal' one is small, and variations in street drug purity can result in overdoses. Thus, in most countries, opiates consumption constitutes the main cause of drug-related deaths. In addition, the processing and trafficking of opiates constitute significant sources of income for insurgents in some opium-producing countries such as Afghanistan and Myanmar. In Afghanistan, a conservative estimate suggests that Taliban insurgents generated some US$125 million per year in profits from the local opiate trade alone in the past several years. In Pakistan, Taliban allies such as al-Qaida and other like-minded groups have bases along the main heroin/opium trafficking routes and are well located to benefit from trafficking. Elsewere in the world, other militant groups also seem to be financing themselves at least partly from the illicit opiate trade.

Similarly, cocaine use constitutes, first of all, a major health problem. Almost a fifth (18%) of the persons who used cocaine in the previous year at least once were found to be dependent on it in the world's largest cocaine market (United States), a higher proportion than for any other drug, except heroin. Cocaine use also results in tens of thousands of deaths each year worldwide. While cocaine was involved in close to 40% of all drug deaths in the United States in 2008, the proportion is still far smaller in Europe (8% in the EU/EFTA countries). After the opiates, cocaine is the most problematic drug worldwide, notably in the Americas. While the share has declined, almost half (46%) of all people entering drug treatment in the Americas do so due to cocaine. The share in Europe increased from 3% in 1997/1998 to 10% in 2008, rising to almost 15% in West Europe. Proportions are far lower in Africa (6%), Oceania (0.5%) and Asia (0.5%), possibly due to the high availability of amphetamine-type stimulants in these regions. There is also a clear link between cocaine use (notably crack-cocaine use) and crime. While 11% of arrestees in the United Kingdom in 2005/2006 were found to have used crack-cocaine in the month prior to their arrest, the proportion of crack-cocaine use in the general population was far lower (0.1% in that year). Similarly, between 29% and 35% of the male arrestees in the United States were found to have used cocaine in the previous month in recent years (29% in 2008), far more than the corresponding rates among males in the general US population (1% in 2008). With cocaine use falling strongly since the late 1980s (-56% in past month prevalence rates between 1988 and 2008), overall crime also saw a marked decline in the United States, ranging from -29% for property crime rates to -43% for murder rates over the 2000-2008 period. Cocaine trafficking is also linked to corruption. Trafficking of cocaine has contributed to increasing corruption in transit countries, including in West Africa. Moreover, cocaine trafficking constitutes a major security threat, financing organized crime and insurgencies in a number of countries, including the FARC in Colombia and the Shining Path in Peru.

Like for the other drugs, the impact of ATS use is primarily on the health side. The proportion of people requiring treatment for ATS abuse is 5% of all drug-related treatment demand in Africa, 10% in Europe and 12% in the Americas. It is particularly high in Oceania (20%) and Asia (21%), reaching 36% in East and South-East Asia with proportions exceeding 50% in Japan, the Republic of Korea, Thailand, Cambodia and the Philippines, as well as in Saudi Arabia in the Near and Middle East. In particular, methamphetamine use constitutes a major health risk where it occurs. Data for the United States suggest that the use of methamphetamine may constitute similar threats to health as the abuse of crack-cocaine, exceeding for the individuals concerned even the risks related to the consumption of cocaine HCl. Organized crime is involved in the diversion of precursor chemicals, and in the manufacture of ATS, as well as its distribution. ATS manufacture has a major negative impact on the environment, which is reflected in the difficulties to dismantle clandestine ATS labs. There is clearly involvement of organized crime groups in ATS production, particularly in East and South-East Asia, as well as in North America. Less is known with regard to financing of insurgencies (this seems to occur mainly in Myanmar) and violence related to its trafficking.

The global illicit opiate and cocaine markets represent two of the biggest transnational drugs and crime threats of our time. Tens of thousands of the millions of opiate users worldwide die every year. Opiates are at the origin of two thirds of all drug treatment demand in Europe and Asia. The opiate market generates an annual turnover of up to US$65 billion, of which some US$ 55 billion for heroin alone. Moreover, the opiate market is interlinked with severe national and international security problems, particularly in Afghanistan and Pakistan. In terms of health impact, cocaine comes next, and represents as big a transnational organized crime threat as heroin. Estimates suggest that the global retail sales figure (some US$88 billion) is even higher than for opiates, and the impact of the cocaine trade on stability can also be severe in some places.

The global heroin and cocaine markets appear simultaneously as persistent problems from a previous era of drug control, priorities for interventions due to the severity of their impacts on affected societies and good candidates for a global solution within a reasonable time-frame. Since they are both sourced from relatively concentrated production areas, most of their components are directly or indirectly linked. The resulting transnational drug economies they form, from production to trafficking and consumption, can thus be addressed as a whole and be affected by shocks and ripple effects. Not only are holistic market control approaches possible in these two cases, but, as shown by history, they are also a necessity. Local successes against illicit cultivation in the past – there were many – have always been offset by displacements to other locations, and closed trafficking routes replaced by new ones.

Illicit production is presently largely entrenched in rural areas that are difficult to control. On the demand side, increases in cocaine consumption in Europe have tended to compensate reductions in North America, and the stabilization of heroin use in West Europe has been offset by a deterioration of the situation in the Russian Federation. Meanwhile, the size and concentration of the trafficking flows to these main destination markets have often created havoc in vulnerable production and transit areas by overwhelming local law enforcement capacities, generating corruption, fuelling violence and instability, and spreading addiction.

A clear lesson from the history of cocaine and heroin control is that the mere sum of uncoordinated national and sectoral efforts, even successful ones, cannot result in global success. Another lesson is that countries with limited means cannot resist, and counter the impact of, powerful transnational trafficking flows on their own.

With the benefit of experience, success against these two markets appears to be within reach and would result in the removal of a large chunk of the world drug problem and many of its associated ills. As regards the availability of tools and data to guide interventions and monitor their impact, the situation is much better than in the case of other drugs. Production is already measured on a yearly basis and national data on trafficking is well reported by Member States. There is relatively good demand data from OECD countries, and gaps in other important consuming countries, particularly for heroin, could relatively easily be remedied by prevalence surveys for cocaine or by indirect measures, such as treatment multiplier methods, for heroin.

Global opium production and global coca production have grown by a factor of 6 (cocaine) and 7 (opium) during the last three decades. Eliminating or significantly reducing the world heroin and cocaine markets will thus require more effective approaches than in the past. What can be done? The first thing is to remedy the biggest shortcomings of previous approaches. Member States have recognized an essential one: a lack of integration. In the 2009 Political Declaration,[4] Member States acknowledged "the importance of promoting, in order to enhance the effectiveness of drug control measures, an integrated approach in drug policies" (art. 31). This call is echoed in the new Plan of Action, notably in its Art. 27, under the title "Addressing supply and demand reduction together": "While drug trafficking is a multifaceted issue than can be effectively tackled only by reducing both supply and demand, this interlinkage is often not taken into account."

To achieve the 2019 objectives, the international community needs to interweave drug supply and demand reduction interventions and integrate national efforts into the framework of renewed international strategies on the scale of the cocaine, heroin and ATS markets. To do so, it is urgent to improve our understanding of how these illicit transnational drug economies operate. UNODC has intensified research efforts on the topic. Preliminary results are presented in this chapter.

4 High-level Segment to the 2009 United Nations Commission on Narcotic Drugs, *Political Declaration and Plan of Action on International Cooperation towards an Integrated and Balanced Strategy to Counter the World Drug Problem,* March 2009 (E/2009/28 - E/CN.7/2009/12).

1.2 The global heroin market

Worldwide, more than 15 million people consume illicit opiates[1] (opium, morphine and heroin). The large majority use heroin, the most lethal form. More users die each year from problems related to heroin use, and more are forced to seek treatment for addiction, than for any other illicit drug. Among illicit narcotics, opiates are also the most costly in terms of treatment, medical care and, arguably, drug-related violence. In addition, heroin is the drug most associated with injection, which brings about a host of acute and chronic health problems, including the transmission of blood-borne diseases such as HIV/AIDS and Hepatitis C. In Central Asia, Ukraine and the Russian Federation, injecting opiates is linked to nearly 60-70% of all HIV infections.[2]

Beyond its health impact, the illicit opiate industry also has a detrimental effect on stability and security in a number of places, including through the funding it provides for insurgents in production areas, particularly in Afghanistan. In 1998, the United Nations General Assembly Special Session on drugs already expressed 'deep concern about links between illicit drug production, trafficking and involvement of terrorist groups, criminals and transnational organized crime.'[3] In some regions, the nexus of illicit drugs, organized crime and instability has taken the form of growing infiltration of state institutions by drug trafficking groups.

Getting opiates from producer to consumers worldwide is a well-organized and, most importantly, profitable activity. The most lucrative of illicit opiates, heroin, presently commands an estimated annual market value of US$55 billion. When all opiates are considered, the number may reach up to US$65 billion. Traffickers, essential to the transportation of drugs from production areas to lucrative end-user markets, pocket most of the profits of this trade. A rough estimate of the number of traffickers involved in moving this illegal commodity across countries and regions would likely stand at well above 1 million people.[4]

The problem is not new and tremendous efforts have been made by governments over the past decades to stem the flow of illicit opiates. Many successes have been obtained. Most of them have been local, however, and over the long term, global illicit opiate production has increased.

The supply source for this huge underground economy is now concentrated in three areas: Afghanistan, South-East Asia (mostly Myanmar) and Latin America (Mexico and Colombia). Together, they supply nearly all the world's illicit opium and heroin, but Afghanistan stands out among this group, accounting for around 90% of global illicit opium production in recent years.

1 Opiates are a group of psychoactive substances derived from the poppy plant, which includes opium, morphine, codeine and some others. The term 'opiate' is also used for the semi-synthetic drug heroin that is produced from poppy compounds.

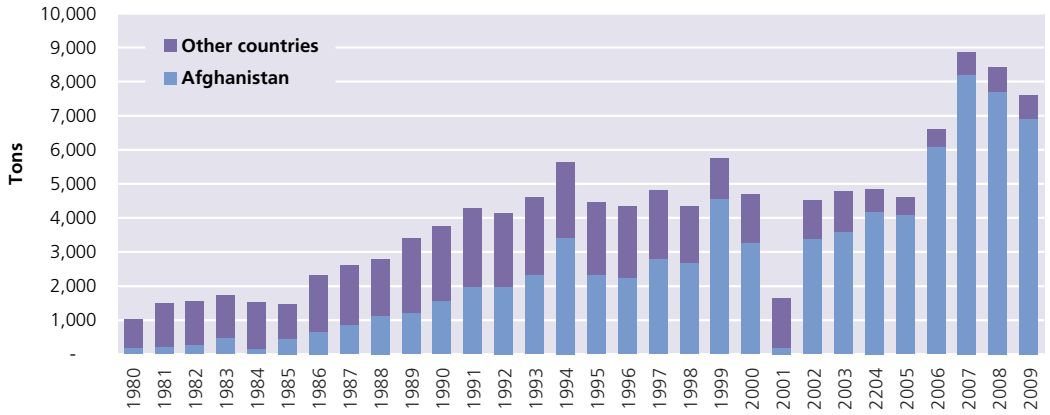
2 Mathers B., Degenhardt L., Phillips B., Wiessing L., Hickman M., Strathdee A., Wodak A., Panda S., Tyndall M., Toufik A. and Mattick R, on behalf of the Reference Group to the United Nations on HIV and Injecting Drug Use, "Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review," *The Lancet*, 2008; 372:1733-1745.

3 United Nations General Assembly Special Session on the World Drug Problem (UNGASS), New York, June 8-10, 1998.

4 Based on the annual number of arrests for heroin trafficking reported and a tentative, but very high, arrest ratio of 20% (1 in 5 traffickers arrested, which is most certainly well above the real number).

Fig. 5: Global potential opium production, 1980-2009

Source: UNODC World Drug Report (figure for 2009 based on 2009 Survey results for Afghanistan and 2008 data for the rest of the world)



By itself, Afghanistan provides 85% of the estimated global heroin and morphine supply, a near monopoly.

In a 2009 Political Declaration reviewing drug control achievements over the previous decade, UN Member States recognized that 'the supply of opiates originating in Afghanistan continues to pose serious challenges to the international community.'[5] On that occasion, Member States also decided to redouble their efforts and to obtain decisive results against illicit supply and demand by 2019. Obtaining such results will require clear improvements in the efficacy of the response provided so far by the international community. A first obstacle stands in the way of designing a reinvigorated strategy. Our understanding of the transnational illicit opiate economy, as well as of its links with other socio-economic and political issues, remains fragmented and relatively superficial. Designing the international response that would solve this decades-old problem within the next 10 years thus requires a particular effort to fill knowledge gaps.

1.2.1 Dimensions of the global opiate market

Estimating demand and supply

As with any other commodity, the laws of supply and demand apply to the trade in illicit opiates. However, unlike most commodities, information on supply and demand is not always readily available due to the illicit nature of the trade. Supply and demand depend on one another in multiple ways; there is no simple link between them. For example, a significant drug supply in trafficking transit regions appears to encourage demand in places where there was previously none.

Estimates presented in this chapter draw heavily on the data reported by UNODC surveys (for example, in Central Asia, the Russian Federation and Pakistan), annual reports from governments to UNODC, referred to as the Annual Reports Questionnaire (ARQ) and UNODC estimates. The UNODC Illicit Crop Monitoring Programme, which collects data on global opium poppy cultivation, was used as the main source of production data.[6] Other indicators examined included the heroin seizure databases of the World Customs Organization (WCO) and UNODC. A trend analysis of both opiate use and seizures data for the 2000-2008 period was carried out by UNODC over the past year to identify the patterns and estimate the magnitude of opiate flows throughout the world.

One important caveat that must be borne in mind is that while the estimates presented are the best currently available, they are not always based on direct research. In the case of demand, indirect methods must sometimes be used, due to the absence - for most countries - of any robust data collection system to arrive at scientifically sound per capita consumption estimates. Only 35% of all countries and territories (76 out of 217) provided data on opiate prevalence rates in the 2008 ARQ; 141 (65%) did not provide data. Out of this total, UNODC used other available sources to calculate drug use prevalence for 55 countries (25%).

Further analysis of information gaps reveals that in 2008, UNODC received no information on opiate

5 United Nations, Commission on Narcotic Drugs (CND), Fifty-second session, Vienna, 11-20 March 2009 (UN document number E/CN.7/2009/Res. 52/2).

6 The details of this methodology can be found in UNODC's *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009, pp.36-37. They can also be found in the online methodology section of the *World Drug Report*.

Table 1: Availability of data on opiate abuse prevalence, by region

Source: UNODC

	Data on prevalence of opiate abuse available (number of countries/territories)		Data on prevalence of opiate abuse not available from any source (number of countries/territories)		
Continent	Data provided through ARQ	UNODC estimation	Number of countries/territories	Share of countries/territories	Total
Africa	4	21	30	55%	55
Americas	12	13	20	44%	45
Asia	20	17	14	27%	51
Europe	38	4	5	11%	47
Oceania	2	N/A	17	89%	19
Total	**76**	**55**	**86**	**40%**	**217**

abuse prevalence from 30 countries in Africa, 20 countries in the Americas, 51 countries in Asia, 5 countries in Europe and 17 countries in Oceania (most of which are small islands).[7] Essentially, a majority of countries do not provide domestic drug abuse data in ARQs which complicates efforts to generate global and/or country-level consumption and consumer figures. Other valuable indicators such as data on opiate purity and prices are even more scarce, but this has much to do with local capacity. As a result, less is known about opiate demand than about opiate supply. All the estimations given in this chapter are therefore based on the limited data available to UNODC and may change or be updated as more data is provided by Member States.

Apart from ARQs, estimates presented in this chapter also relied on indirect methods (mostly treatment multiplier and capture-recapture methods) which usually represent the best evidence available to estimate national demand for opiates. For some countries, household survey data is also available. This tends, however, to be less reliable for the use of drugs such as heroin, which is highly stigmatized and where many users no longer live in a 'normal' household.

The global number of opiate users can be estimated at more than 15 million in the recent period. Around a quarter of them consume some 1,100 mt of opium in raw form.[8] The rest use heroin and consume approximately 340 mt of pure heroin per year.[9] In opium equivalents,[10] opiate demand could be estimated at 3,700 mt worldwide.

Demand for opium

There are an estimated 4 million opium consumers worldwide. Unlike heroin demand, which is more evenly distributed around the world, opium consumption is concentrated in Asia, where it has a long tradition of use. Over the past century, opium gradually ceded its place to heroin, but it still maintains important markets in countries like the Islamic Republic of Iran, India and Pakistan.

Afghanistan is the world's largest opium producer and exporter but it is also an important consumer. The country accounted for 7% of total world demand, or 80 mt a year, for an estimated 150,000 users in 2008 (rising to 200,000-250,000 in 2009).[11] A large volume of opium is consumed in the Islamic Republic of Iran, approximately 450 mt, according to UNODC estimates. But all of Afghanistan's neighbours report worrying levels of opium use. Excluding China, consumption in the countries bordering Afghanistan (the Islamic Republic of Iran, Pakistan, Tajikistan, Uzbekistan and Turkmenistan) is estimated at 650 mt per year; 60% of global consumption. Although small-scale cultivation occurs in these countries, such as in Pakistan and Central Asia,[12] the main supply source for the region's opium consumers is Afghanistan.

Other parts of the world are affected as well. In the Russian Federation, over 58 mt of opium are consumed annually,[13] while the Middle East absorbs some 16 mt per year. In the Americas, opium consumption is mainly reported in Mexico. The level of opium consumption (if

7 Many of these gaps are due to the lack of well-developed data collection systems in many countries.

8 Some users consume both heroin and opium, but the overlap between the two categories is difficult to quantify. For the purpose of simplicity, calculations did not take it into account.

9 Throughout this report, the term 'heroin' refers to a product with the purity of heroin produced at the main source, Afghanistan (70%).

10 Taking into account the distribution of production between Afghanistan and the rest of the world, volumes expressed in terms of opium equivalents in this chapter use a conversion factor of 7.5:1.

11 UNODC, *Afghanistan drug use survey 2005*, 2006.

12 As the UNODC *Illicit drugs trends in Central Asia* (2008) report notes "Given the 2006 regional total of 2.22 hectares of reported cultivation, this is equivalent to a potential output of 90 kg of opium, a minute fraction of the amount produced in Afghanistan."; see UNODC "Illicit drug trends in Central Asia", April 2008, p.8.

13 Of note, some of these users consume only "kompot" (a poppy straw solution that is usually injected), which is generally sourced locally.

Table 2: Estimated opium and heroin consumption, 2008

Source: UNODC

	Region/ country	Heroin users	Opium users	Heroin consumption (mt)	Opium consumption (mt)	Total opiate consumption (opium equivalent)
Major distribution destinations of Myanmar and Laos heroin production	Myanmar	66,000	67,000	1.3	7.0	20.1
	China*	2,254,000	119,000	45.0	12.0	458.2
	India	871,000	674,000	17.0	67.0	239.8
	Oceania	32,500	52,000	2.0	5.0	23.4
	Asia (except India, China, Myanmar)	852,000	1,118,500	17.0	75.0	245.0
	Sub total	**4,075,500**	**2,030,500**	**82**	**166**	**986.6**
Major distribution destionations of Afghan heroin	Afghanistan	47,000	146,000	2.0	80.0	91.8
	Pakistan	547,000	145,000	19.0	80.0	213.8
	I.R. of Iran	391,000	531,000	14.0	450.0	547.0
	Central Asia	283,000	60,000	11.0	33.0	112.2
	Russian Federation	1,490,000	166,000	70.0	58.0	548.6
	Turkey	25,000	25,000	0.8	9.0	14.4
	Europe (except Turkey and Russian Federation)	1,614,000	271,000	88.0	95.0	711.0
	Americas	1,538,000	82,000	26.0	29.0	212.0
	Middle East and South Asia (except I.R. of Iran, Pakistan and Afghanistan)	63,500	491,000	1.6	16.0	27.2
	Africa	1,240,000	172,000	25.0	60.0	235.0
	Sub total	**7,238,500**	**2,089,000**	**257**	**910**	**2,713**
	Total	**11,314,000**	**4,119,500**	**340**	**1,075**	**3,700**

* The reported number refers to the annual number of users as estimated by F. Lu, N. Wang, X. Sun, et al in "Estimating the number of people at risk for and living with HIV in China in 2005: methods and results", *Sexually Transmitted Infections*, June 2006, Vol. 82 Suppl 3, pp. iii 87-91. The number of annual users differs from the official number of opiates users registered which in 2009 was 900,000.

any) in other Latin American countries remains unknown due a dearth of data for nearly half of all Latin American countries.

India has traditionally been an important consumer of opium.[14] Based on the ARQs provided by the Government, current opium consumption in India is estimated at some 65-70 mt per year. The Government reports also show that foreign-sourced opium has neither been seized nor reported as trafficked into India. Consequently, such a consumption level (6% of the estimated global total) would require the illicit cultivation of some 1,500 - 2,000 hectares of opium poppy on Indian territory. Diversion from licit cultivation could also be a source of supply, but Indian authorities now consider this possibility less likely given the limited size of licit cultivation (6,000 ha in 2009) and the strict controls in place. Opium is also consumed in neighbouring countries, such as Bangladesh and Nepal. But there also, Afghanistan (or Myanmar) does not appear to be the source. Government reports and recent field research have confirmed the existence of (limited) illicit opium poppy cultivation in Nepal, as well as in the border areas of Bangladesh and India,[15] which could be the source for consumption in these countries. Until now, it was generally assumed that these markets were captured by Myanmar and Afghan suppliers, but the possibility of an emerging regional source of supply cannot be discounted and needs to be studied further.

The main African country to have reported opium

14 UNODC, *A century of international drug control*, 2008, p.15.

15 UNODC mission report to South Asia, information provided by Bangladesh, Nepalese and Indian counter-narcotics officials, March 2009.

Fig. 6: Estimated global opium consumption in 2008

Source: UNODC

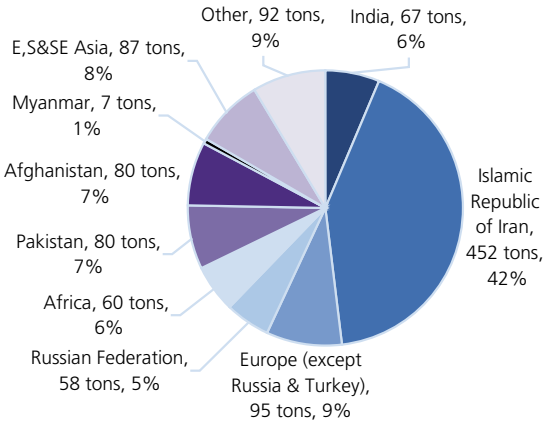
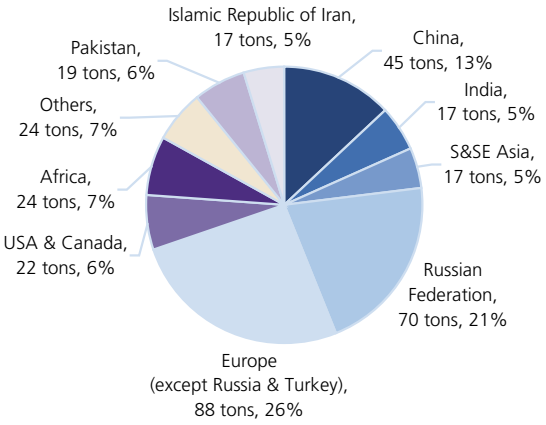


Fig. 7: Global heroin consumption (340 mt), 2008

Source: UNODC



consumption is Egypt. As in India, there are no reports or data to indicate that the opium consumed in Egypt (estimated at 60 mt)[16] is trafficked from another country. This may suggest the existence of illicit cultivation of some 1,000 ha of opium poppy in Egypt. Raw opium may also be consumed in other African countries, but until comprehensive drug use surveys are conducted or other data is made available to UNODC, much uncertainty will remain in this area.

Although it reportedly consumed an extraordinary 26,690 mt of opium a century ago,[17] consumption in China now appears to be limited to some 12 mt annually.[18] The opium consumed in South–East and East Asia originates mainly in Myanmar and to a much lesser extent in the Lao People's Democratic Republic. There may be some local production in other East and South-East Asian countries, since the amount of opium seized there (0.3 mt in 2008) is not proportional, compared with other regions, to the estimated level of consumption (75 mt). Moreover, there is little evidence of opium trafficking from Myanmar or the Lao People's Democratic Republic to these countries.

Demand for heroin

Heroin is a more potent and addictive derivative of opium. It may be smoked or injected. In recent years, it is estimated that some 340 mt of the substance have been consumed worldwide each year.

Two markets, Europe[19] and the Russian Federation, currently account for nearly half of global heroin consumption. With 70 mt of heroin consumed per year, the Russian Federation is estimated to be the country with the highest national level of consumption. The combined level of heroin consumption in European countries is estimated at around 85-90 mt.[20] Within Europe, four countries dominate, namely the United Kingdom (some 19 mt), Italy (about 18 mt), France (an estimated 10 mt) and Germany (approximately 7 mt). Afghan opium is now the only known source of heroin consumed in Europe and the Russian Federation.

In 2008, available data suggest that around 20 mt of heroin were consumed in the United States of America, 1.3 mt in Canada and 5 mt in Latin America. According to US Government reports, the majority of the heroin consumed in the country comes from Latin America and Mexico. The rest is trafficked from Afghanistan via Europe and Africa. Opium production in Mexico was reported to have sharply increased that year (by 120%), amounting to 325 mt of raw opium, from which 30-40 mt of heroin could potentially be produced.

In contrast to its high opium consumption levels and despite its proximity to the world's largest heroin producer, official reports indicate that heroin consumption is relatively low in the Islamic Republic of Iran (14 mt for an estimated 391,000 users). Afghanistan's other neighbour, Pakistan, has approximately 500,000 heroin users, estimated to have consumed around 19 mt of heroin in 2008. At the source, in Afghanistan, domestic consumption is estimated at around 2 mt per year (2008)

16 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009.

17 UNODC, *A century of international drug control*, 2008, p.91.

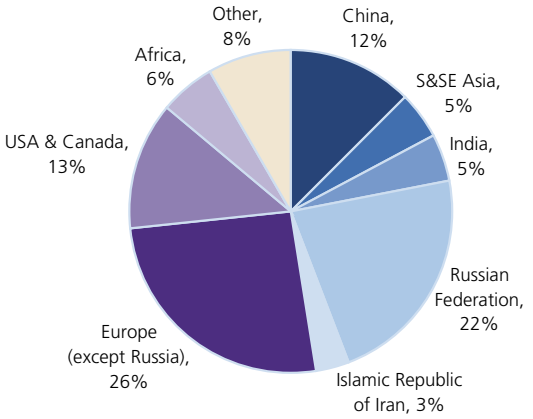
18 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009, p.27.

19 For the purpose of analysis in this chapter, "Europe" excludes Turkey and the Russian Federation.

20 Ibid.

Fig. 8: Global heroin/opium market distribution (US$ 65 billion) in 2008

Source: UNODC



among 50,000 users (this increased to 100,000-135,000 in 2009.

At an estimated 17 mt in 2008, India has the highest level of heroin consumption in South Asia. The estimated amount of heroin consumed in neighbouring Bangladesh was also considerable, amounting to 4 mt in the same year. In Nepal, heroin consumption appears to have increased in recent years and is currently estimated at around 800 kg. As already noted, there appears to be a certain level of heroin production – and illicit opium poppy cultivation- in India. According to official reports from the Governments of Nepal and Bangladesh, almost all the heroin consumed in those countries originates in India.

China's 2.2 million heroin users, the largest population in absolute terms, were estimated to consume some 45 mt of heroin in 2008. Most of the supply for China is sourced in Myanmar, although Afghan heroin appears to be gaining market shares. In other South-East and East Asian countries, heroin consumption was estimated at around 18 mt. The main sources of the heroin consumed in this region are Myanmar and the Lao People's Democratic Republic, followed by processed Afghan opium. In Australia and New Zealand, the annual heroin consumption was estimated at 1.8 mt, sourced from both Afghanistan and Myanmar.

Nearly all of Africa's opiate users are reportedly consuming heroin.[21] Although estimates for that region are not very reliable, approximately 25 mt of heroin would be needed to supply Africa's addict population,[22] tentatively estimated at 1.2 million individuals. Most of this market appears to be supplied by Afghan heroin trafficked via Pakistan, India and a number of countries along the Arabian peninsula.

Value of the trade

At retail level, the total value of the heroin market is substantial at an estimated US$55 billion. The size of the annual opium market is a more 'modest' US$7-10 billion. Consequently, the combined total opiates (heroin/opium) market could be worth up to US$65 billion per year. This amount is higher than the GDPs of many countries. In economic terms, nearly half of the overall opiate market value is accounted for by Europe (some US$20 billion) and the Russian Federation (US$13 billion). Other lucrative markets include China (US$9 billion) and the United States and Canada (US$8 billion). Most profits are generated downstream, leaving Afghan producers with only a fraction of the profits. The farm-gate value to the farmer for cultivation and immediate sale of opium was estimated at US$0.4 billion in 2009. When adjusted to include the profits derived from trafficking of opium and the conversion of opium to morphine and/or heroin, the value to the Afghan opium economy was estimated at US$2.4 billion (2009) or only about 3.5% of the total value of the opiate industry.

Global volume and distribution

To estimate the quantity of opiates required to supply world illicit demand, one must add reported seizures to estimated levels of consumption. Some 646 mt of opium and 91 mt of heroin/morphine were seized in 2008. Around 5,000 mt of opiates (heroin, morphine and opium combined and expressed in opium equivalents) would have needed to enter the market to satisfy global demand in 2008.

For heroin only, world consumption (some 340 mt in 2008) combined with reported seizures (91 mt in 2008), would indicate an annual flow of about 430 mt of heroin into the global market.

The distribution of opium production

Production in Afghanistan increased from around 200 mt in 1980 to 3,300 mt in 2000, reaching a peak of 8,200 mt in 2007, before dropping slightly to 7,700 mt in 2008 and again to 6,900 in 2009. Expressed as a proportion of the global illicit opium production, Afghanistan's share rose from around 20% in 1980 to 70% in 2000, and to more than 90% since 2006. This is directly related to decreased output in the 'Golden Triangle', encompassing Thailand, the Lao People's Democratic Republic and Myanmar, the world's leading opium producer in the 1970s and 1980s. Between 2003 and 2008, opium production in Myanmar fell by 59%, from 810 to 410 mt. Production in the neighbouring Lao People's

21 UNODC, *2006 World Drug Report*, p. 74.

22 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009, p. 13.

Table 3: Opiate (opium, heroin and morphine) seizures, 2008

Source: UNODC

		Heroin and morphine (mt)	Heroin and morphine in opium equivalent (mt)	Opium (mt)	Total opium equivalents (mt)
Major distribution routes of Myanmar and Laos heroin production	Myanmar	0.3	3.0	3.9	7
	China	4.3	43.0	1.4	44
	India	1.1	11.0	2.0	13
	Oceania	0.1	0.8	0.0	1
	Asia (except India, China, Myanmar)	1.0	10.0	0.3	10
	Sub total (rounded)	**7**	**68**	**8**	**76**
Major distribution routes of Afghan heroin	Afghanistan	3.3	23.1	43.0	66
	Pakistan	9.2	64.4	27.0	91
	I. R. of Iran	32.0	224.0	561.0	785
	Central Asia	5.3	37.1	4.8	42
	Russian Federation	3.4	23.8	0.4	24
	Turkey	15.5	108.5	0.5	109
	Europe (except Turkey and Russian Federation)	10.4	72.8	0.3	73
	Americas	3.6	25.2	0.8	26
	Middle East and South Asia (except I. R. of Iran, Pakistan and Afghanistan)	0.8	5.6	0.1	6
	Africa	0.3	2.2	0.1	2
	Sub total (rounded)	**84**	**587**	**638**	**1,225**
	World total (rounded)	**91**	**655**	**646**	**1,301**

Democratic Republic also declined dramatically, from more than 120 mt in the 1990s to around 10 mt in recent years. Thailand's production is negligible; it has not reported any significant cultivation since 2003.

Although Afghanistan's potential opium production decreased by 10% from 2008 to 2009, it is still well above the average annual production recorded during the 1990-2006 period. Data do not show a corresponding increase in world demand and UNODC has not registered any unusual price declines or dramatic increases in the purity of the heroin seized worldwide. On that basis, and taking into account uncertainties as regards the exact level of world demand, a potential over-production of some 12,000 mt during that period presents a supply-demand riddle that deserves attention.

Turning to the Americas, the average amount of opium estimated to be produced in Latin America and Mexico was around 130 mt per year until 2006. In 2008, a reported 120% increase in opium production in Mexico made it the third biggest opium producing country after Myanmar with 325 mt potentially produced in 2008.

Fig. 9: Global opium production, 1990-2009

Source: UNODC

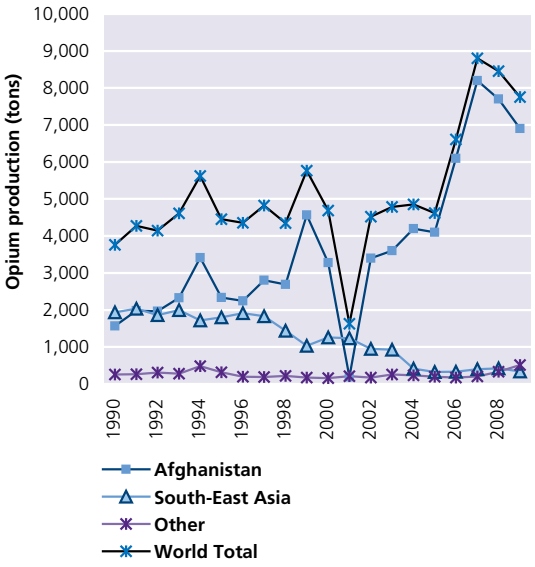
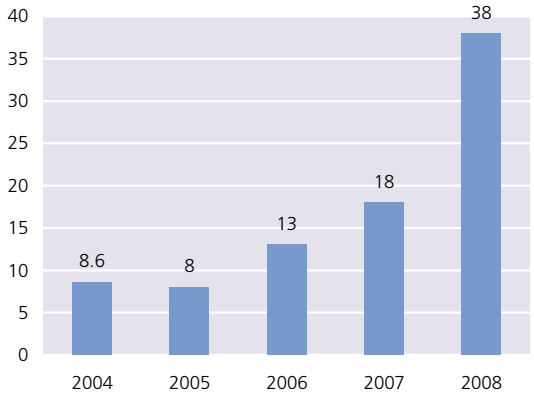


Fig. 10: Potential pure heroin production in Mexico, in metric tons, 2004-08

Source: National Drug Intelligence Center, *National Drug Threat Assessment 2010*



Some data also suggest that limited illicit cultivation takes place in other countries, such as Egypt and India. At the time of writing, no information was available on the quantities cultivated and produced, which, in the case of Egypt, may be negligible. Algeria reports the eradication of approximately 80,000 opium poppy plants every year, but this production appears to be limited to supplying the local market.[23] Finally, there is illicit cultivation in some CIS countries. Ukraine, the Republic of Moldova and the Russian Federation for example seem to be self-supplied for their own local market of poppy straw derivative solution (Kompot).

The distribution of heroin production

In 2008, approximately 2,700 mt of Afghanistan's opium were refined into an estimated 380 mt of heroin to supply the global market. Placing a distant second is Myanmar and the Lao People's Democratic Republic production which yielded some 40 mt of heroin in 2008; all processed in Myanmar. The remainder, some 30-40 mt in 2008, is shared among mostly Latin American countries (including Colombia and Mexico). Processing Mexico's opium output alone would potentially yield some 38 mt of pure heroin in 2008. Lastly, lower levels of heroin production continue to exist in places like India.

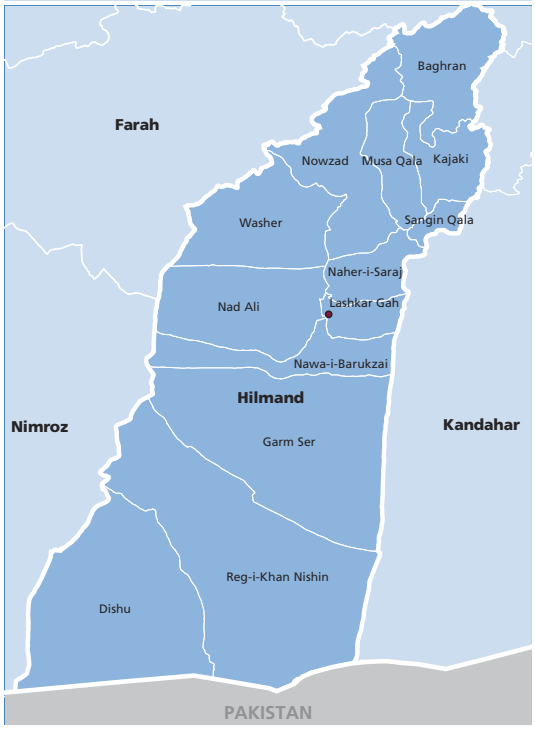
Through a relatively simple chemical process, opium is used as the raw material for the extraction of morphine base, an intermediary product. A crucial precursor chemical, acetic anhydride, is then used to convert morphine base into heroin.[24] In terms of quantities, each kg

23 INCB, *Report of the International Narcotics Control Board for 2009*, February 2010.

24 Other chemicals are required but most of these are anyway not restricted under international conventions.

Map 1: Hilmand province

Source: UNODC



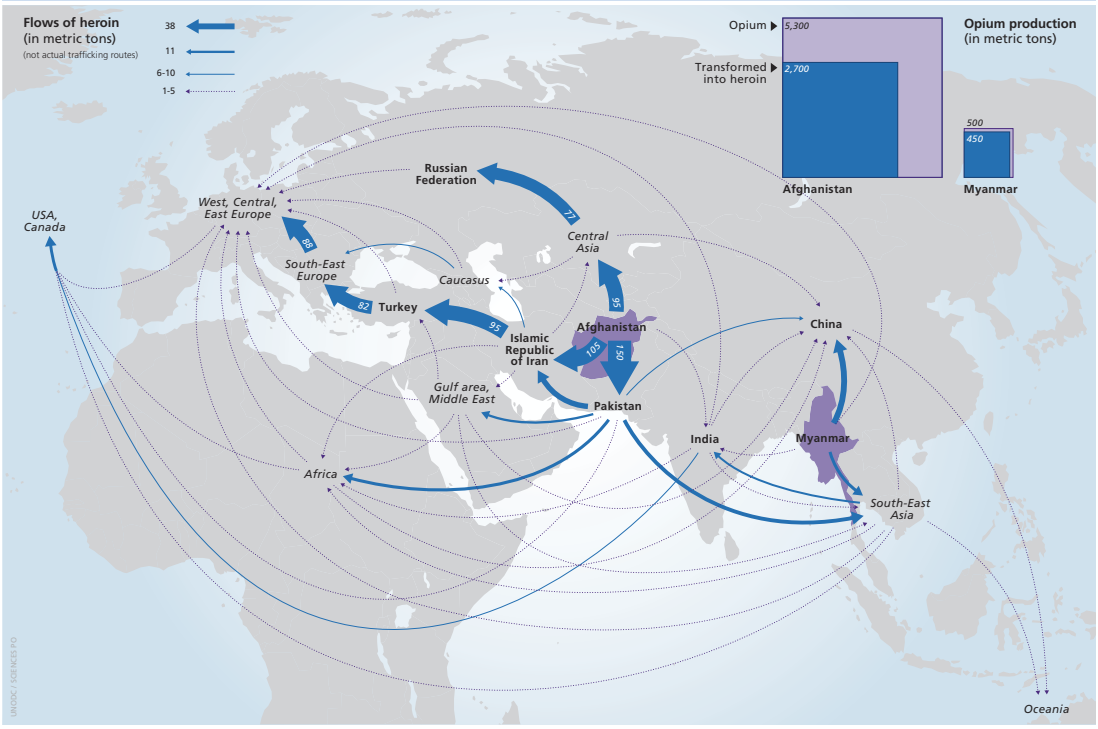
of Afghan heroin requires approximately 7 kg of Afghan opium to produce. Afghan opium generally has a higher morphine content than the opium produced in Myanmar which requires approximately 10 kg of opium for each kg of heroin processed. Laboratories refining Afghan opium therefore face somewhat lower processing costs in the initial phases of heroin production.

Acetic anhydride costs approximately US$1-2 per litre in licit trade but (illicit) prices in Afghanistan have shot up over the past decade from US$24 to US$350 per litre, either due to more effective interdiction or increased demand. Since acetic anhydride is not produced in Afghanistan, it must be diverted from licit trade and smuggled into the country. In order to produce the required volumes of heroin (380 mt), as much as 1,000 tons of acetic anhydride needed to be smuggled into Afghanistan (or other countries where processing potentially takes place) in 2008. The interdiction of 14,233 litres in Afghanistan in 2008, while an increase over 2007, remains marginal at a ratio of approximately 1%.

Generally speaking, there is a geographical overlap between regions of opium production and heroin processing (Afghanistan, Myanmar). It is established that there is a considerable number of heroin laboratories in Afghanistan. This is evidenced by reports from the Afghan authorities on the destruction of 69 facilities in

Map 2: Global heroin flows of Asian origins

Source: UNODC



2008[25] (against 57 in 2007) while UNODC surveyors identified 97 laboratories that same year. By way of comparison, Myanmar authorities dismantled 24 heroin laboratories over the 2006-2008 period.[26]

In Afghanistan, processing (and cultivation) are concentrated in the southern provinces, such as Hilmand, Kandahar and Nimroz, where the insurgency and lack of government control provide the ideal cover. Notably, Kandahar's Spin Boldak district was the location of the largest acetic anhydride seizure in 2008, with 7,500 litres (enough for over 3.5 mt of heroin) confiscated in a single incident. But Hilmand province is at the core of the global trade in Afghan opiates. As well as its vast production of opium, it is also the location of large, fixed heroin processing facilities. In 2008, Hilmand province alone accounted for almost 50% of Afghanistan's opium seizures.[27] Of the known district locations, Dishu in the south and Nad Ali in the centre saw the greatest seizure volumes. The latter district is a major opium poppy cultivation area on the Hilmand river, while Dishu is a processing district and a hub for trafficking into Pakistan. However, all of the laboratories dismantled in Hilmand in 2008 were in central and northern districts. Well-known opiate bazaars in places such as Lashkar Gah, Baramcha and Girishk continue to operate, although they were the scene of several seizures in 2008.

At the same time, there is also the possibility that not all Afghan opium is processed into heroin in Afghanistan. If this is the case, Afghanistan needs to export opium (and/or morphine) for this purpose, which, in the case of opium, increases the chance of detection. There are no reports, however, of Afghan opium being trafficked to the Americas, Africa, South Asia (except Pakistan) and South-East Asia. Only a trivial amount is thought to be shipped to Gulf countries and is limited to local consumption. Between 2000 and 2008, seizure data provided to UNODC indicated negligible opium and morphine seizures in European countries (including Turkey). There were, however, sizeable opium seizures reported by countries north of Afghanistan. In 2008, approximately 4.5 mt of opium were seized in Central Asian countries but the regional market (34 mt) likely absorbed most of the flow. Moreover, there is a general absence of morphine seizures in this region.

25 UNODC Afghanistan country office, *Analysis of Opiate and Precursor Seizures in Afghanistan in 2008*, 2009, p.13; see UNODC *2009 World Drug Report*, p.37.

26 UNODC, *Patterns and Trends of Amphetamine-Type Stimulants and Other Drugs in East and South-East Asia (and neighbouring regions)*, November 2009, pp 86-91.

27 UNODC Afghanistan country office, *Analysis of Opiate and Precursor Seizures in Afghanistan in 2008*, 2009, p.13; see UNODC *2009 World Drug Report*, p.37.

The highest volumes of morphine and opium seizures were reported by Pakistan and the Islamic Republic of Iran, Afghanistan's immediate neighbours. In 2008, Pakistan (7.3 mt) and the Islamic Republic of Iran (9 mt) seized a combined 16.3 mt of morphine, a staggering 95% of global morphine seizures. In contrast, Afghanistan only seized 479 kg that same year. Most Iranian and Pakistani morphine seizures occurred close to the Afghan border, perhaps suggesting that if large-scale processing is taking place outside Afghanistan, it is staying close to the source. Both Pakistan (27 mt) and the Islamic Republic of Iran (573 mt) effected more than 90% of global opium seizures, but demand for the substance is high in both countries while that of morphine is negligible. Referring to these numbers, the *2008 World Drug Report* concluded that such high morphine and opium seizures indicated that 'important amounts of heroin might be produced outside Afghanistan, as morphine does not have a large user base.' This possibility needs to be further researched.

Distribution of trafficking flows

As mentioned earlier, there is no strict division between regions of supply and demand. The same caution is warranted in examining 'transit' regions, which very often are also regions of consumption and possibly add to supply. The following estimate of global opiate flows uses a methodology combining both supply-side and demand-side analyses from production, consumption and seizure data.[28]

At first sight, there are distinct patterns of distribution, as production in Latin America and Myanmar is mostly dedicated to the US and Chinese markets, respectively. Altogether, these two regions constitute around 15% of total heroin flows in the world. Afghanistan accounts for an estimated 85% of global heroin and morphine exports, often overlapping with both Latin America and Myanmar, including in the case of the United States and Chinese markets, respectively.

From Afghanistan

Of the estimated 380 mt of heroin produced in Afghanistan, approximately 5 mt stay in the country for local consumption or is seized by local law enforcement.[29] The remaining 375 mt are exported to the world via routes flowing into and through the neighbouring countries of Pakistan (150 mt), the Islamic Republic of Iran (105 mt) and the Central Asian countries of Tajikistan, Uzbekistan and Turkmenistan (95 mt) towards their final destinations in Europe, the Russian Federation and Asia.[30]

About a third of the heroin produced in Afghanistan travels to Europe (110 mt) while a quarter goes north to Central Asia and the Russian Federation. Afghan heroin is also increasingly meeting a rapidly growing share of Asian, mainly Chinese, demand. Approximately 15-20 mt are estimated to be trafficked to China while another 35 mt are trafficked to other South and South-East Asian countries. [31] Perhaps 35 mt are shipped to Africa, while the remainder supplies markets in other parts of Asia, North America and Oceania.

In addition to heroin, Afghanistan also exports some 1,000 mt of opium annually to its immediate neighbours (the Islamic Republic of Iran, Pakistan and Central Asia) and further to a global market of some 4 million opium consumers - most of which are in Asia.[32] With the exception of South and Central America, Afghan opiates are now trafficked and sold in virtually every corner of the globe.

From Myanmar

More than three quarters of Myanmar's production (some 40 mt of heroin) supplies the local and regional markets, primarily Chinese. The remainder goes to other South-East Asian countries and Oceania.

From Latin America (Colombia and Mexico)

In 2008, it is estimated that some 30-40 mt of heroin were potentially produced in Latin America (mainly Mexico and Colombia). Producers in Colombia and Mexico supply all of the Americas, although the majority goes to the north.

Flow interception (seizures)

Interception rates vary widely between regions; however, estimated global interception rates are approximately 20% of the total heroin flow worldwide in 2008. The Islamic Republic of Iran leads all countries with 23% of all heroin interceptions. Turkey comes next with 16%, followed by the United States and China, which come in third and fourth with 9 and 8% respectively. Heroin seizures decreased sharply in Pakistan compared to the average level observed between 2000 and 2006 (26 mt).

28 Available demand data was the key variable used to estimate the size of the heroin/opium flows. Total heroin consumption was estimated for each country, then combined with official seizure data and balanced against total production.

29 The country seized less than three mt of heroin in 2008, a seizure rate of less than 1%.

30 The destination of the remaining 20 mt is unknown. It might be sourced from Afghanistan via Pakistan and/or other routes and/or be produced in India (diverted from the licit to the illicit market). In order to clarify this, an in-depth heroin consumption and trafficking study should be carried out in India.

31 There are approximately 20 mt of heroin unaccounted for which can potentially be trafficked to India (see UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009) but this remains a hypothesis until further evidence is produced.

32 See UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009, p. 11.

Table 4: Heroin flow and interdiction, 2008

Source: UNODC

Country/region	Estimated amount of heroin + morphine flow (mt)	Average heroin + morphine seizures (mt)	Percent of estimated flow intercepted
Afghanistan	380	3.30	1%
Pakistan	150	9.20	6%
I. R. of Iran	140	32.00	23%
Turkey	95	15.50	16%
South-East Europe (Bulgaria, Greece, Albania, Romania, Serbia, FYR Macedonia, Bosnia, Croatia, Montenegro)	90	2.8	3%
Rest of Europe (except Russian Federation)	105	7.60	7%
Midde East& Gulf countries (except I. R. of Iran)	14	0.80	6%
Central Asia	95	5.30	6%
Russian Federatioin	77	3.40	4%
Africa	35	0.31	1%
Myanmar	60	0.30	1%
India	37	1.10	3%
China	55	4.30	8%
Rest of S, E & SE Asia	30	1.00	3%
Oceania	2	0.08	4%
USA and Canada	24	2.1	9%

Interdiction rates continued to remain very low in the main production centres of Afghanistan (1%) and Myanmar (1%), in African countries (1%), the Balkans (3%) and India (3%). In 2008, there were also substantial decreases in heroin seizure volumes in Western and Central Europe (7.6 mt), compared to the level observed between 2000 and 2006 (9 mt).

Global impact

The opium economy is deeply entrenched and its reach extends far beyond the borders of the few source countries. Whether one looks at the damages to the health of communities, the rise in criminal activity, the loss of economic productivity, the impact on global security or the more insidious corruption of government institutions, it is fair to say that illicit opiates leave very few nations untouched.

The cost of opiate use to individual users and to society as a whole is high. Studies indicate that more users die each year from problems related to heroin use and more are forced to seek treatment for addiction than for any other illicit drug. Users develop both tolerance and physical dependence, which means that their bodies adjust to the presence of heroin over time, requiring more to produce the same effect and inducing severe withdrawal symptoms if the drug is not taken in sufficient quantities. The difference between a recreational dose and a fatal one is small, and variations in street drug purity result in many overdoses. The mortality rate for dependent heroin users is between 6 and 20 times that expected for those in the general population of the same age and gender.[33] In addition, heroin is the drug most associated with injection, which brings about a host of acute and chronic heath problems including the transmission of blood-borne diseases such as HIV/AIDS and hepatitis C.

The largest national market for Afghan heroin is the Russian Federation; a market which has rapidly expanded since the dissolution of the Soviet Union. It is there that heroin is currently doing some of its worst damage, including through the spread of HIV. In neighbouring Central Asia, the past 10 years have witnessed both the highest increase in prevalence of drug abuse worldwide and similarly alarming levels of HIV/AIDS. Both these regions are good examples of the speed and extent of the

33 WHO/UNODC/UNAIDS position paper: "Substitution maintenance therapy in the management of opioid dependence and HIV/AIDS prevention".

damage a sudden increase in heroin transit can do. On the Balkan route, the ravages of opiate consumption in the Islamic Republic of Iran have been well documented, that country having one of the largest opium user populations in the world. In Africa, an emerging destination for Afghan heroin, a rise in injecting drug use[34] could worsen an already severe HIV/AIDS epidemic.[35] In Afghanistan itself, while most of the lethal crop is exported, enough is left behind to create addiction. In 2005, UNODC estimated the entire opiate-using population to be 200,000. Since then, recurring anecdotal information appears to indicate increased addiction rates, sometimes affecting and debilitating entire villages.

In 2008, 285,000-360,000 opiate users were found in Afghanistan. In addition to creating health problems, the opiate trade has implications for global security. Previous UNODC research highlighted the role of drugs (including opiates) as precursors or perpetuators of instability worldwide.[36] One early example was the Soviet invasion in 1979, which triggered the mass production of opiates in Afghanistan. Global drug production is increasingly being concentrated in a few unstable areas and conflict zones. In the case of opiates, insurgent groups operating in various theatres are thought to partially fund their operations from the taxing of production and trafficking. In Afghanistan, a conservative estimate placed the figure at US$125 million/year in profits for Taliban insurgents. Across the border, in Pakistan's tribal areas, Taliban allies such as al-Qaida and other like-minded groups (for example, the Islamic Movement of Turkestan and the Tehrik-e-Taliban Pakistan) have bases along the main heroin/opium trafficking routes and are ideally located to benefit from trafficking. In other parts of the world, militant groups such as the Kurdistan Workers' Party (PKK) or rebels in India's north-east may also be benefiting from the illicit opiate trade. Illicit opiates thus potentially feed a chain of insecurity stretching across Asia and Europe.

Transnational crime generates money and power. This power is not sufficient to threaten the stability of developed states, but in Afghanistan, and some vulnerable countries on the Balkan and Northern routes, money generated from opiates compares well with GDPs. The amount of money that the trade brings to bear on these countries' political systems and societies poses a threat to their development and some nations may be at risk of 'drug dependence'. Countries like Afghanistan (48% of GDP in 2007, 33% in 2008 and 26% in 2009), are in a sense dependent on the illicit opiates industry. In the case of Tajikistan, the industry may amount to as much as 30% of the recorded GDP.[37] This situation is exploited by powerful criminal organizations, which have in some cases infiltrated the highest levels of government. These groups, which generate vast profits through drug trafficking and other illicit activities, are able to corrupt governmental officials, reduce the effectiveness of law enforcement and derail the march towards instituting the rule of law in newly-formed states in the Balkans, transition states in Central Asia and vulnerable states in Africa. Of course, corruption can emerge at any part of the chain, which means that corruption is not limited to transit (or source) countries.

1.2.2 Northern route

Unlike other major routes out of Afghanistan which have existed for decades, the Northern route through Central Asia and into the Russian Federation is a relatively recent phenomenon, only taking shape in the mid-1990s. In this region, both the nature and extent of drug trafficking have been strongly shaped by the dissolution of the USSR, whereby newly-formed states had to suddenly police borders previously administered centrally. These new borders remained virtually open until new national customs services were created in 1993–1994.[38]

Routes and volumes

UNODC estimates that 25% of all Afghan heroin -or 95 mt- are trafficked each year from Afghanistan into the Central Asian Republics (CARs) towards the Russian Federation.[39] This total includes heroin that is consumed en route or at destination, seized by law enforcement or to a limited extent, trafficked onward to Europe. The Russian market is estimated to consume approximately 70 mt of heroin annually while Central Asian demand stands at 11 mt; the rest is either seized or continues onwards.

In addition to heroin, some 120-130 mt of opium are smuggled into the region each year, mostly for consumption in the CARs and the Russian Federation. There is no evidence of morphine being shipped in large quantities through this route. Transformed into opium equivalents, approximately 780-800 mt of opiates are trafficked annually along this route.

34 One of the indicators of that trend is the rise in the number of heroin users, which appears to have increased by 54% between 2004 and 2008 in Africa.

35 Sub-Saharan Africa, is home to two-thirds (67%) of people living with HIV/AIDS or 22 million people; see UNAIDS, *Report on the Global AIDS epidemic 2008*, August 2008.

36 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009; see also UNODC, *Crime and instability: case studies of transnational threats*, February 2010.

37 Letizia Paoli et al., "Tajikistan: the rise of a narco-state", *The Journal of Drug Issues*, 2007, p.951.

38 Martha Brill Olcott et al.; "Drug trafficking on the great Silk road: the security environment in Central Asia", Carnegie Endowment working papers, 2000.

39 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009.

From Afghanistan to the north, traffickers are offered a choice of three countries: Tajikistan, Uzbekistan and Turkmenistan. These northern borders span a length of some 2,600 km. The Uzbek and Tajik borders are marked by the Amu Darya River, while the Turkmen border is mostly desert. Although there is no shortage of possibilities for clandestine crossings, it appears that most of the trafficking occurs along established trade and transit routes. There are nine official crossings between Afghanistan and Central Asia, including two river ports, one on the Uzbek border and one on the Tajik border. These river ports are the primary conduit for legitimate trade, and also, it appears, for trafficking. They are:

- Hayraton (Afghanistan's Balkh province - Sukhandaraya province of Uzbekistan);
- Ninji Pianj (Afghanistan's Kunduz province - Khatlon Province, Tajikistan).

Uzbekistan's border with Afghanistan is short (137 km) and well-policed. While armed attempts at night crossings still occur, traffickers generally prefer to avoid this border in favour of easier alternatives such as the Tajik border. It appears instead that most opiates that do enter Uzbekistan first transit Tajikistan and to a lesser extent Kyrgyzstan. What cannot be excluded, however, is that larger, long-distance shipments by well-protected networks may find it convenient to use the better-developed infrastructure of Hayraton when aiming for the Russian market, or even to import precursor chemicals, as evidenced by a 2008 seizure of 1.5 mt of acetic acid.[40]

Afghanistan's border with Turkmenistan is lengthy (744 km) and mostly desert. There is some lab activity in the border areas of adjoining Afghan provinces (such as Badghis), which is of concern since traffickers generally export opiates over the closest border. The Turkmen route is facilitated by the presence of approximately 1 million ethnic Turkmens in Hirat, Badghis and Faryab provinces. Turkmenistan also shares a 992 km border with the Islamic Republic of Iran where an equal number of Turkmens reside, mainly in the Mazanderan and Khorassan provinces, close to the border. Turkmenistan borders the Caspian Sea for a length of 1,768 km and its coastal port of Turkmenbashi was long viewed as an important heroin route across the Caspian to Azerbaijan and further to Europe. Although the Caspian is undoubtedly used for opiate trafficking, recent UNODC field research suggests that trafficking through this particular seaport may have fallen into disuse. Seizure data also appears to indicate limited direct trafficking from Afghanistan into Turkmenistan. Other routes may however be used. Recent data from the Central Asia Regional Information and Coordination Centre (CARICC) indicates the emergence of a new route through Turkmenistan: From Afghanistan to the Islamic Republic of Iran-Turkmenistan-Kazakhstan-Russian Federation/CIS countries-Europe.[41] Not enough information is available on this route to estimate its importance, however. Turkmenistan was a leading country in precursor chemical seizures in the late 1990s,[42] but no movements have been detected in the past decade.

From a law enforcement perspective, control of the Tajik-Afghan border (1,387 km) is becoming more and more elusive. Outside fixed border points, traffickers continue to swim, wade or cross the Amu Darya river by boat, with the majority reportedly crossing undetected. Once in Tajikistan, the loads are then broken down into smaller quantities to be shipped across the border by land, rail and air. The larger portion of opiates travels north through Kyrgyzstan toward Kazakhstan. In Kyrgyzstan, the southern city of Osh has consistently been identified as a regional hub of trafficking activity. As noted, a smaller flow veers east into Uzbekistan and further to Kazakhstan.

The building of new bridges across the Amu Darya river, while crucial for the development of regional trade, is misused by traffickers. According to law enforcement sources, opiate traffickers, in collusion with corrupt officials, reportedly use the cover provided by legitimate cross-border commerce to traffic growing quantities of heroin into Tajikistan.[43] These developing corridors can also be potentially misused for precursor conveyance destined for laboratories in north-eastern Afghanistan.[44] In 2007, a seizure of 10 mt of acetic anhydride in the Russian Federation was to be shipped by truck to Afghanistan, by way of Tajikistan.[45]

In all, 95 mt of heroin are estimated to be trafficked across these three borders. Estimates suggest that the largest proportion of the Central Asian flow runs through Tajikistan. Once in Central Asia, traffickers have access to a number of transportation options, including a well-developed road and rail network. Based on seizure figures, most trafficking appears to be conducted in private and commercial vehicles, often in relatively small amounts. Of 45 heroin seizures above 500 grams (a commercial quantity) made in Tajikistan between 2005

40 Acetic acid is not a controlled substance but as been cited as a possible alternative to acetic anhydride in processing.

41 UNODC Regional office for Central Asia, "Compendium 2010".

42 In 1997-1998, 78% of heroin seized in Central Asia was apprehended in Turkmenistan while in 1995-2000, more than 198 mt of precursor chemicals were seized in the country, mostly acetic anhydride; see UNODC ROCA, "The Drug and Crime Situation in Central Asia: Compendium", 2003.

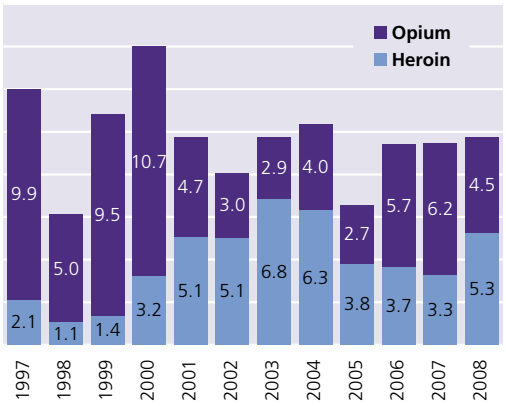
43 Interview, Tajikistan, November 2009.

44 UNODC surveyors identified 24 laboratories (13 morphine, 11 heroin) in north-eastern Afghanistan, see UNODC Afghanistan country office, *Analysis of Opiate and Precursor Seizures in Afghanistan in 2008,* p 13.

45 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009, p.73.

Fig. 11: Opiate seizures in Central Asia, 1997-2008 (mt)

Source: UNODC Regional Office for Central Asia



and 2007, 80% amounted to 10 kg or less, and of these, the average size was 2.6 kg. The largest seizure, made in 2005, was 119 kg. This is a large seizure, but it would take hundreds of similar shipments to accommodate the 95 mt estimated to be trafficked through the region.[46]

There appears to be a recent trend toward larger seizures, however, suggesting increasingly well-resourced organizations. While it was rare to find a seizure of over 100 kg of heroin in Central Asia (or the Russian Federation) prior to 2008, at least 14 such seizures have been made since that time, including in Kazakhstan (537 kg), Tajikistan (100 kg twice), Uzbekistan (133 kg and 568 kg) and the Russian Federation (330 kg). A similar trend was observed with opium, where larger than usual consignments were seized in Tajikistan (400 kg), Turkmenistan (200 kg) and Uzbekistan (155 kg and 190 kg) in 2008. Of course, it remains unclear whether these trends reflect changes in the nature of the trafficking or in the nature of enforcement.

Reversing a previous downward trend that started in 2005, heroin seizures sharply increased in 2008 and made up the largest proportion of opiates seized in Central Asia. In all, 5.3 mt of heroin (60% more than in 2007) and 4.5 mt of opium (28% less than in 2007) were seized in Central Asia in 2008. Tajikistan has traditionally led Central Asia in heroin seizures, and on a per capita basis, probably leads the world in opiate seizures.[47] Turkmenistan's seizures are dominated by opium while other Central Asia countries appear more balanced. In 2008, Uzbekistan's heroin seizures (1,472 kg) more than tripled compared to 2007 (480 kg).

Although most opiates are reported trafficked by road, traffickers can also move their product by air, including via direct routes into the Russian Federation. A common method involves internal body carry or 'swallowers'; most start their journey in Tajikistan. Air routes from Central Asia carry smaller shipments of opiates than land routes, but on aggregate, they likely amount to significant quantities with higher profit margins. According to official reports from the Russian Federation, more than 20% of seized heroin enters the Russian Federation through commercial airliner.[48] A smaller proportion, approximately 12%, is reportedly trafficked northward by passenger train. Here again, internal body carry appears to be a common method. UNODC estimates that approximately 25 mt of heroin are trafficked by air/rail, while the bulk, some 50-55 mt, is trafficked using the regional road network, mainly via Kazakhstan.[49]

Although Kazakhstan is the inescapable heroin gateway to the Russian Federation if travelling by land, it seized only about 3% of the heroin flow estimated to cross its territory in 2008, despite a three-fold increase in heroin seizures over previous years. Kazakhstan is also last in regional opium seizures despite an annual consumption estimated at 18 mt. This anomaly is difficult to explain. It is true that due to their length, Kazakhstan's borders are the most challenging of all the CARs. A country roughly the size of Western Europe, Kazakhstan must police some 12,000 km of land borders (including the 7,000 km border with the Russian Federation) and 1,900 km of Caspian Sea coastline. Conversely, Kazakhstan is probably the best equipped Central Asian state to handle the drug threat as it has the largest financial resources. A 2008 report from the Central Asian Regional Information and Coordination Centre (CARICC) starkly concluded: "If drugs reach the territory of Kazakhstan then the probability of safe shipping to the Russian Federation can be around 95%." Once the heroin reaches Kazakhstan, most passes through the northwestern borders into the populated areas of south-western Russia and western Siberia.

In addition to losses en route such as seizures and local consumption, not all heroin is destined for the Russian Federation. One small stream (approximately 1 mt) veers east towards China's Xinjiang province to supply the Chinese market. Based on anecdotal reports, this route may have grown in significance although it is unclear if one or all of Central Asia's borders with China

46 In contrast, large cocaine seizures are typically multiple mt, and the wholesale value of these drugs is about the same in their primary destination markets.

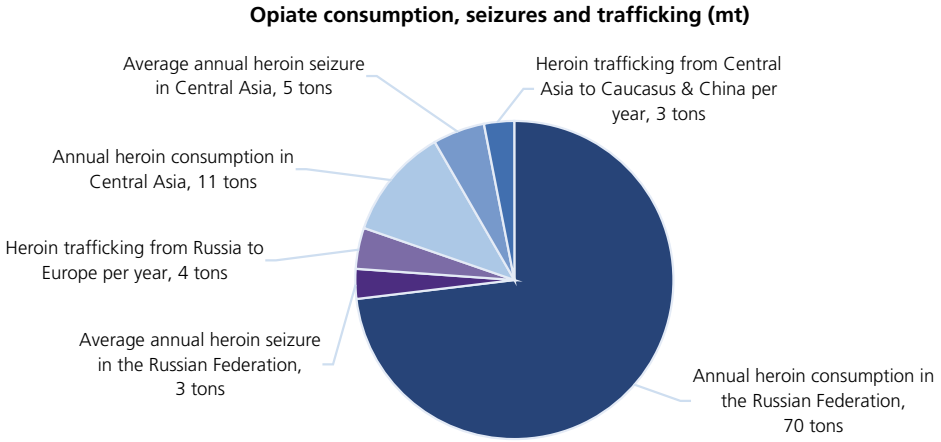
47 According to UNODC data, three of the Central Asian countries were listed among the top 25 opium seizing countries in 2007. In terms of global heroin seizures, Tajikistan ranked 7th; Kazakhstan – 19th; and Uzbekistan – 21st.

48 ARQ, Russian Federation 2008.

49 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009, p.50.

Fig. 12: Distribution of the heroin market on the Northern route, 2000-2008

Source: UNODC



are used for trafficking.[50] Another two mt are estimated to be shipped from Central Asia to the Caucasus region every year. The remainder, approximately 75-80 mt of heroin, enters the Russian Federation. Some 70 mt is annually consumed by heroin users in the Russian Federation and an average of 3 mt of heroin is seized annually. This leaves an estimated 4 mt of heroin to exit into Ukraine, Belarus, the Baltic countries and the Nordic countries.

How does the market operate?

The dissolution of the USSR influenced the dynamics and structures of organized crime in the region. Firstly, it permitted the re-activation of dormant cross-border trade, ethnic and family ties with Afghanistan. Second, the Central Asian states inherited a well-established air and road communication system that links them to the Russian Federation and Europe, a boon for opiate traffickers seeking new markets and alternate routes to Europe. Third, these new states are mostly poor and some have had problems with political insurgencies. Under-resourced and struggling to find their feet, addressing heroin trans-shipment was not an early priority. During the early transition years, Afghan groups quickly expanded their operations into Central Asia. The civil war in Tajikistan (1992-1997) was a facilitator, creating a lawless climate and further impoverishing the least developed of all post-Soviet states. In the post-war period, some warlords and criminal elements were left to consolidate their position. Over time, Tajik and other Central Asian groups would traffic increasingly large loads into a rapidly expanding Russian market. Networks became entrenched and relationships were cemented with both Russian organized crime and Afghan suppliers.

On the Afghan side of the border, trafficking to Central Asia appears to be dominated by reportedly five major Afghan narcotics networks, comprised of officials, organized crime groups and warlords with sprinkled elements from former Mujahedin factions such as *Hizb-i-Islami*. These (sometimes overlapping) networks are often engaged in legitimate businesses and work alongside much smaller, often family-based, groups. Ethnic Tajiks living on both sides of the Tajik-Afghan border and their common language are important in this respect. Although there are some laboratories active in the adjacent north-eastern Afghan provinces (Takhar, Kunduz and Badakhshan)[51] bordering Tajikistan, most Central Asian heroin is processed in and trafficked from southern Afghanistan. Pashtun networks based in the south ship narcotics across the country to Uzbek and Tajik groups for further shipment. Although groups are generally organized along ethnic lines in Central Asia, mixed ethnic membership is also found in some regions. This is most obvious in Tajikistan where some networks are composed of nationals from Afghanistan and Tajikistan. This facilitates trafficking operations and ensures smooth lines of supply.

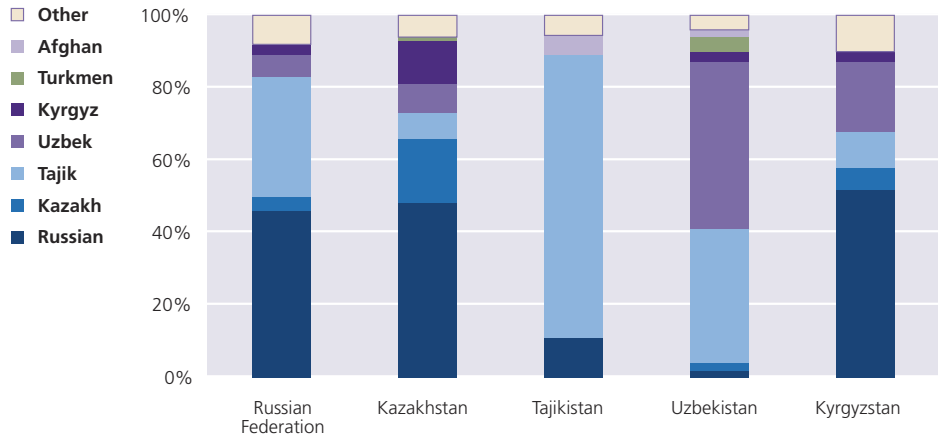
Based on customs seizures, there is plenty of evidence of transnational activity, but no national groups appear to dominate regional trafficking. Russian nationals comprise a large share of arrestees in Kazakhstan and Kyr-

50 According to some reports, the level of heroin trafficking from Central Asia (especially from Tajikistan) to China may be higher than currently estimated. Given the paucity of information, it is currently difficult to estimate the importance and extent of this relatively new phenomenon.

51 There are also laboratories active in Nangarhar (eastern Afghanistan) and a portion of their production reportedly moves north.

Fig. 13: Distribution of nationalities of arrested heroin traffickers at customs, 2000-2008

Source: World Customs Organization



gyzstan, but a much smaller share among countries that span the Afghan border. Conversely, a small number of Afghans are arrested in Tajikistan, but usually not further afield. Tajiks appear to be major players in a number of countries, including the Russian Federation, but are detected in much smaller numbers in Kazakhstan. According to Western law enforcement sources in the region, Russian-based organized crime groups generally place orders with Tajik-based groups who arrange for trans-shipment of the drugs from Afghanistan through Tajikistan. The drugs are then moved through the region and into the Russian Federation. It is possible that the Tajik groups who source the drugs then pass the consignments on to Russian groups in Kazakhstan but it seems more likely that the drugs change hands several times before reaching the consumer.

Outside these 'regional' nationalities, West Africans, especially Nigerians, have also been reported, particularly in Tajikistan. In some instances, they may act as simple couriers, as demonstrated with the 2006 attempt by a Nigerian group to have one of their own cross the Kazakh-Chinese border with heroin. There is a distinct possibility that firmer ties across borders will occur between Central Asian groups and networks that originate outside the region. Increased cross-border commercial ties and a re-establishment of ethno-cultural linkages with the western Chinese province of Xinjiang could facilitate supply to a growing heroin market in that part of China.

Heroin trafficking in some Central Asian countries also appears increasingly complex and professional. Large seizures in recent years may indicate an organized trafficking business, while arrest statistics seem to suggest a trend towards regionalization. Although they are still numerically important, individual entrepreneurs and smaller groups united by family ties or kinship may have become fewer in number. There is also evidence that traffickers are increasingly resorting to violence in order to protect shipments. Armed clashes used to occur mostly on the Tajik-Afghan border, but Uzbek and Turkmen border guards are reporting incidents as well.[52]

Heroin increases in value as it distances itself from the source. The estimated value of opiates (at the borders) trafficked through the Afghanistan/Central Asia border area is US$350-400 million[53] annually. The portion that eventually reaches the Russian Federation will be worth 30 times this amount. In the Russian Federation, retail distribution of heroin and other drugs is carried out by a variety of criminal groups typically organized along ethnic lines with Central Asian, Caucasian, Russian/Slavic and Roma groups all active in drug trafficking.[54]

Impact of this flow

In terms of absolute numbers, the Russian Federation is particularly affected with its 1.5 million addict population. The hugely damaging threat of HIV/AIDS is directly related to heroin injection. To date, there are over a quarter of a million registered HIV cases (although the number of unregistered cases is estimated to be much higher than this) in the Russian Federation. Of these, over 80% are intravenous drug users. In the CARs, nearly 15 years of continuous heroin transit has created

52 Interview Uzbek Chief of Border Guards, Tashkent, Uzbekistan, November 2009; Interview Deputy Chief Turkmen border guards, Ashghabat, Turkmenistan, November 2009.

53 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009.

54 International Narcotics Control Strategy Report - 2007.

Table 5: Heroin users and consumption in the Russian Federation and Central Asia

Source: UNODC

Country	Number of estimated heroin users	Estimated level of heroin consumption (mt)	Number of estimated raw opium users	Estimated level of opium consumption (mt)
Tajikistan	20,300	1	4,700	3
Turkmenistan	31,200	1	1,400	1
Uzbekistan	118,600	5	13,800	8
Kyrgyzstan	25,900	1	9,600	5
Kazakhstan	86,000	3	33,000	18
Total (rounded)	**282,000**	**11**	**62,500**	**34**
Russian Federation	**1,500,000**	**70**	**160,000**	**58**

a local market of 282,000 heroin users, consuming approximately 11 mt of heroin annually. Local opium consumption is estimated at approximately 34 mt (although demand in Turkmenistan may be underestimated). This puts some Central Asian states on par with countries with the highest global opiate abuse prevalence.[55] As in the Russian Federation, heroin use in Central Asia has led to a jump in HIV cases, spreading predominantly among male injecting drug users of the most productive age (20 to 49 years).[56] Another statistic completes this grim picture: the total number of officially registered HIV cases in Central Asia has increased 19-fold in the last decade: from 1,641 cases in 2000 to 30,993 cases[57] in late 2008.[58]

The total value of the opiate market is estimated to be around US$13-15 billion per year in both Central Asia and the Russian Federation.[59] By virtue of this financial weight alone, organized crime in the region contributes substantially to problems of corruption and undermines governance. Drug traffickers are able to offer substantial bribes to poorly paid local police, border guards and customs to turn a blind eye to suspicious shipments. In Central Asia, both Tajikistan and Kyrgyzstan are particularly vulnerable, and both have very high levels of corruption.

55 Current annual prevalence of opiate abuse is estimated to be around 1% of the adult population (between 15 – 64 years) in the region.

56 UNODC Regional Office for Central Asia, *Compendium of Drug Related Statistics. 1997-2009, 2009*, p.7.

57 In 2008, 6,664 officially registered persons with HIV/AIDS were identified in Central Asia.

58 UNODC Regional Office for Central Asia, *Compendium of Drug Related Statistics. 1997-2009, 2009*, p.7.

59 These figures are necessarily imprecise, particularly due to the lack of data on heroin purity levels in Central Asia and lack of certainty regarding the size of the Russian heroin using population.

1.2.3 Balkan route

The Balkan route to West and Central Europe runs from Afghanistan via the Islamic Republic of Iran, Turkey and south-east European countries. This route and its various branches form the artery that carries high purity Afghan heroin into every important market in Europe. UNODC estimates that 37% of all Afghan heroin or 140 mt is annually trafficked into the Islamic Republic of Iran, from Afghanistan *and* Pakistan, towards the European market.

Routes and volumes

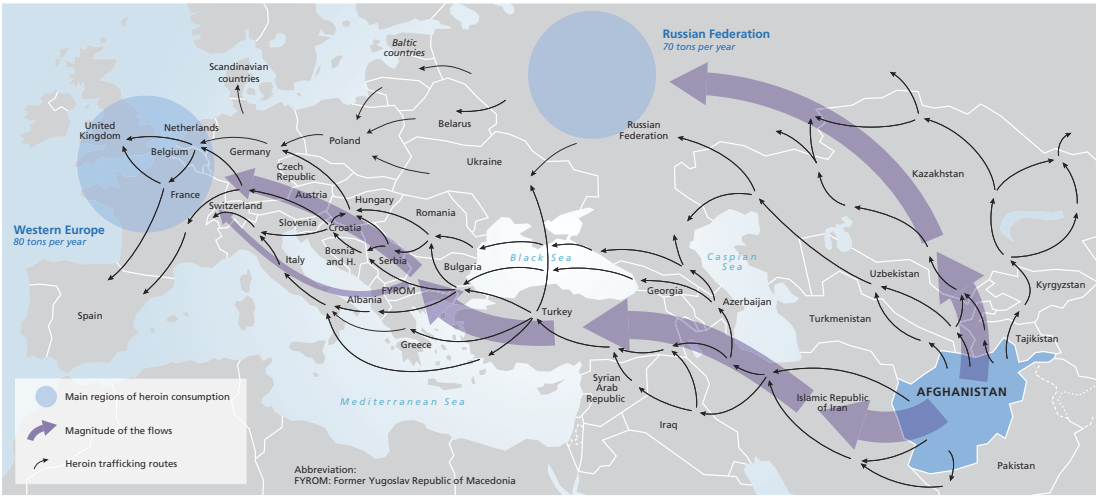
The Islamic Republic of Iran's eastern border with Afghanistan and Pakistan is 1,845 km long and consists of mainly mountainous or harsh desert terrain. There are obvious challenges to achieving even partial control over this area, although 12,000 anti-narcotics police and border guards are reportedly deployed at these long borders.[60] The Balkan route begins in Afghanistan's southern and western provinces, with shipments destined for both the Afghan-Iran border and the Afghan-Pakistan border.

Most of the heroin flow moves through the Iran-Afghan border. Every year, approximately 105 mt of heroin are smuggled from the Afghan provinces of Nimroz, Hirat and Farah into eastern Islamic Republic of Iran. Possibly due to increased law enforcement efforts at that border, Afghan traffickers are thought to increasingly rely on the Afghanistan-Pakistan-Iran route, estimated to handle an additional 35 mt of heroin. To do this, they must first cross into the Pakistani province of Balochistan and veer

60 UNODC project document, "Integrated Border Control in the I.R. of Iran (IRNI50).

Map 3: The Northern and Balkan routes

Source: UNODC



east into the Islamic Republic of Iran. Once in the Islamic Republic of Iran, only two borders separate Afghan opiates from mainland Europe.

In all, approximately 1,000 mt of opium and 140 mt of heroin flow into the Islamic Republic of Iran via these borders. Most of the heroin, around 30% (105-110 mt) of Afghanistan's total production, continues to move west/south-west into the Islamic Republic of Iran towards Turkey and further to Europe. This total includes heroin that is consumed within Europe, seized by law enforcement or trafficked onward to destinations like the United States. The bulk of the supply (at least 80%, or 85 mt) travels the traditional overland Balkan route. An additional 10 mt reach Europe by air or sea from various points of departure.

The so-called 'northern Balkan route' is a relatively recent variant on the Balkan route which transits the Caucasus rather than Turkey. Every year, approximately 9 mt of heroin are estimated to be trafficked from the Islamic Republic of Iran along this route. Joining this flow is a smaller volume of about 2 mt from Central Asia (not shown on map). In all, 11 mt of heroin are estimated to enter the Caucasus. Some 4 mt are either consumed or seized. The remainder, around 7 mt,[61] is thought to be trafficked to Europe. Through one branch of this route, an estimated 6 mt are shipped from Georgia and then to Europe (Bulgaria) via the Black Sea.[62] A smaller flow of 1 ton also travels through Georgia, but moves northward across the Black Sea to the Ukraine.[63]

61 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium,* 2009, p.49.

62 Ibid., p.39.

63 Ibid., p.39.

Some of the identified routes running through the Caucasus are:

1. Islamic Republic of Iran – Azerbaijan – Georgia – Black Sea – Ukraine and/or Bulgaria;
2. Islamic Republic of Iran – Caspian Sea – Russian Federation/Caucasus – Black Sea – Ukraine and/or Bulgaria;
3. Afghanistan – Central Asia – Caspian Sea – Azerbaijan/Caucasus.

Other, smaller routes include trafficking from the Islamic Republic of Iran into Azerbaijan and onward to Dagestan in the Russian Federation, and a small heroin flow originally shipped to the Ukraine via the Caucasus region for transport to Romania and beyond to West Europe. An extension of the Northern route, perhaps 4 mt per annum (4%), is also reported to reach Europe via the Russian Federation.

Heroin crosses from the Azarbaycan-e-Khavari province of the Islamic Republic of Iran into Turkey and traverses Turkey's Hakkari and/or Van districts. An estimated 95 mt of heroin are shipped across Turkey's borders every year along the following routes:

- Hakkari/Van – south-eastern cities – central Anatolian cities – Istanbul – Edirne to Bulgaria/Greece.
- Hakkari/Van – south-eastern cities – southern/western Anatolian cities and onward to Greece/Cyprus by sea.
- Hakkari/Van – south-eastern cities – central Anatolian cities – northern Anatolian cities – Ukraine.

From Turkey, around 80-85 mt of heroin flow towards West Europe (particularly Germany, the Netherlands Italy and the UK) along several routes:

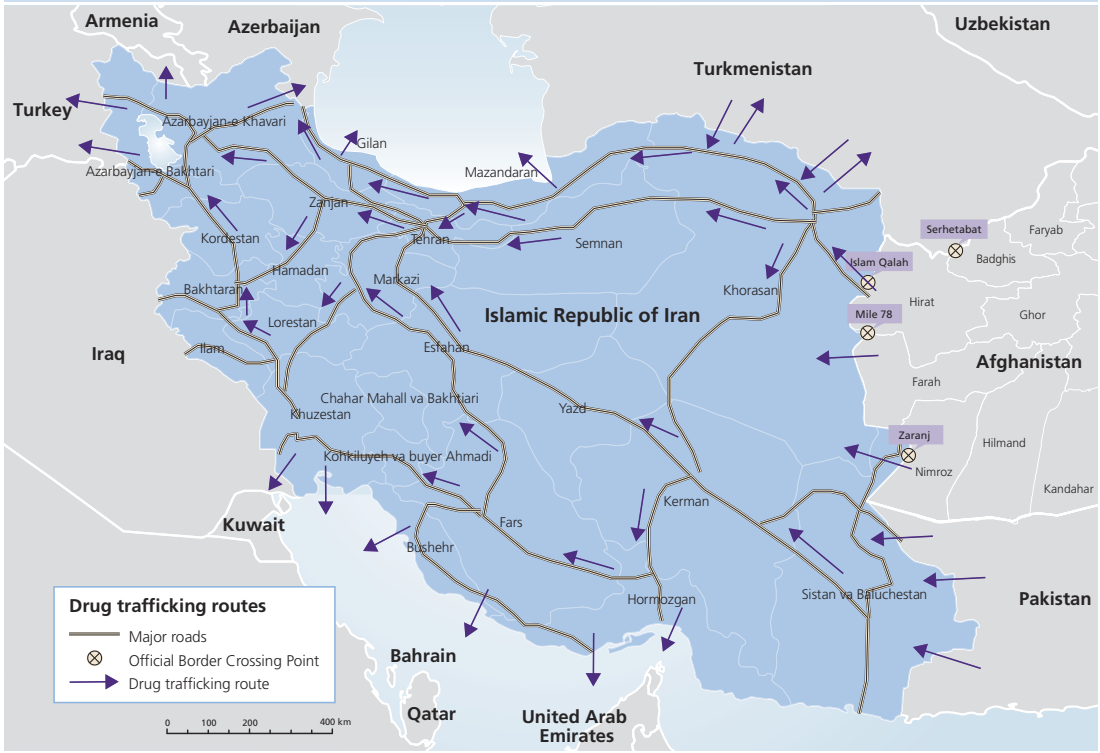
Table 6: Breakdown of heroin flows to Europe

Source: UNODC

Route	Size of flows (mt)	Percentage (rounded)
Balkan route (Afghanistan-I. R. of Iran-Turkey-Southern Europe-Rest of Europe)	85	80%
Northern route (Afghanistan-Central Asia-Russian Federation-East Europe)	4	4%
Northern Balkan route (Afghanistan-I. R. of Iran-Caucasus-Southern Europe)	7	7%
Directly from Pakistan to West and Central Europe	5	5%
Through Africa to Western and Central Europe	2	2%
Directly from South and South-East Asia (except India) to West and Central Europe	1	1%
Through the Middle East and the Gulf area to West and Central Europe	1	1%
Directly from India to West and Central Europe	1	1%
Total	**106**	**100%**

Map 4: Major drug trafficking routes in the Islamic Republic of Iran

Source: UNODC



- **To Italy**: Approximately 20-25 mt[64] of heroin are trafficked towards Italy (mostly by sea) and Switzerland. Most of that amount is thought to be trafficked via Bulgaria, Greece, the former Yugoslav Republic of Macedonia and Albania for onward transportation to Italy. A smaller route proceeds directly from Greece by sea towards Italy. Some heroin also flows via the former Yugoslav Republic of Macedonia to Serbia, Bosnia and Herzegovina, Croatia and Slovenia and further north. In addition, an undetermined amount of heroin is trafficked via sea and air from Turkey to Italy.

64 This amount is equivalent to the estimated quantity of heroin consumed in Italy and Switzerland.

- **To the Netherlands and Germany**: The bulk of the heroin trafficked along this route (approximately 55 to 60 mt) travels to Germany and the Netherlands through Bulgaria, Serbia, Hungary and Austria, or through Bulgaria, Romania, Hungary, Slovakia and Austria. From Germany and the Netherlands, heroin shipments are trafficked onwards to larger markets in France, the United Kingdom and Spain.

Because of its central position along the Balkan route, Austria plays an important transit role for much Germany-bound heroin. Heroin flows to Austria through its borders with Slovenia and Hungary. However, some heroin destined for the German market is trafficked through Bulgaria, Romania, Hungary, Slovakia and the Czech Republic, thereby bypassing Austria. Controls at Schengen borders are limited or non-existent.

Other routes include:

- To East Europe: A limited amount of heroin is trafficked directly from Turkey to Ukraine by sea.
- Direct shipments to West and Central Europe: An undetermined amount of heroin is trafficked directly from Turkey to Western and Central European countries such as Germany, the Netherlands, Belgium, France and the United Kingdom by sea and air.

How does the market operate?

Considerable quantities of heroin are trafficked to Europe by sea and air, but the Balkan route resembles the Northern route in that the bulk of the flow proceeds by land. Most of the heroin headed for West European markets leaves Afghanistan into the Islamic Republic of Iran, Pakistan and Turkey, which collectively seize most of the heroin interdicted in the world (40% of the estimated flow intercepted in 2008). Despite these remarkable enforcement efforts, traffickers nevertheless succeed in getting sufficient volumes through, so that most of the heroin consumed in Europe in recent decades has passed through these countries.

Drug smuggling along the Balkan route is systematic and seems to involve groups with ample resources and consignments much larger than those found on the Northern route (in Central Asia). On the Balkan route, the average amount of heroin seized is approximately 10 kg, which is twice the average amount seized on the Northern route. Consignments very rarely travel the whole way from Afghanistan to Europe in a single unbroken journey. Normally, they will be bought and sold by different groups along the route, the mode of transport will change, and loads will be split and merged as they are moved westward. Seizures are especially large up to Turkey, at which point consignments appear to be broken down into smaller quantities.

The logistics of the trade summarized above necessitates the involvement of well-organized trafficking groups with international connections. For such profit-driven organizations, the lure of Afghan opiates is obvious given the huge mark-ups that arise with distance from the source. One kg of heroin is worth around US$2,000-2,500 in Afghanistan, but rises to US$3,000 on the Afghanistan-Pakistan border and to US$5,000 on the Iran-Afghanistan border. It increases yet again by around 60%, to approximately US$8,000, at the Iran-Turkey border. Based on the estimated flows via this route, Iranian crime groups organizing heroin trafficking from the Afghanistan-Iran border to the Turkey-Iran border stand to pocket some US$450-600 million per year. In addition to heroin, raw opium (some 1,000 mt in 2008) also flows from Afghanistan to the Islamic Republic of Iran via the above-mentioned routes to feed an established Iranian market. An estimated total of 450 mt[65] of opium is consumed each year in the Islamic Republic of Iran. The annual street value of opium consumed in that country is around US$900,000.

Given the huge sums involved and the serious penalties if caught,[66] traffickers along the Iran-Afghanistan borders are generally well-organized and well-armed. Deadly clashes between Iranian troops and traffickers are commonplace, as demonstrated by the thousands of casualties sustained by the Iranian border guards in the past three decades. Depending on the border region, smugglers may be Baluchi tribesmen or Kuchi nomads. If opiates are trafficked through Balochistan - via the largely uncontrolled borders of the Nimroz, Hilmand and Kandahar provinces of Afghanistan - Taliban insurgents are known to provide security to drug convoys up to the border. Balochistan-based organized crime groups then transport the heroin to the Iran-Pakistan border. Once the heroin enters the Islamic Republic of Iran, drug trafficking groups based in that country facilitate onward trafficking to the Turkish border. This is supported by the official statistics of the Islamic Republic of Iran which show that most traffickers are Iranian nationals, with few Pakistanis arrested in the Islamic Republic of Iran (similar proportions are observed for Iranian arrestees in Pakistan). These numbers and other reports suggest that the involvement of Pakistani organized crime groups may not extend far inside the borders of the Islamic Republic of Iran.

Once Iranian criminal groups receive the shipments, the majority is forwarded westward towards Turkey. As previously noted, a portion of the flow veers north and transits the Caucasus towards Europe. The presence of 12 to 20 million ethnic Azeris in northern Islamic Republic of Iran can facilitate direct traffic into Azerbaijan. Also hindering drug law enforcement over Azerba-

65 UNODC, *Addiction, crime and insurgency*, 2009, UNODC.

66 *Drug control in 2009*, Annual Report, Islamic Republic of Iran.

ijan's 132 km long border with the Islamic Republic of Iran is the existence of uncontrolled territories due to an unresolved conflict. In fact, the entire Caucasus region hosts several breakaway republics and disputed zones, over which no recognized national authority has control. The recent conflict in Georgia, for example, has reportedly led to an increase in the volume of heroin trafficking from that country to Europe via the Black Sea.

On the main route to Turkey, ethnic Kurdish groups, with large border populations in the Islamic Republic of Iran, Iraq and Turkey, may be responsible for border crossings. These groups may resell these drugs in Turkey or traffic them to Europe through their own networks. The United Kingdom's Serious Organised Crime Agency argues that in 2009, 138 Turkish networks continued to control the heroin supply to Europe.[67] According to WCO seizure statistics between 2000 and 2008, the majority of drug traffickers arrested in Turkey were Turkish nationals. This might suggest that Turkish groups are organizing the heroin trafficking all through Turkey up to the borders with Bulgaria and Greece where Balkan-based groups take over.

Once heroin leaves Turkish territory, interception efficiency drops significantly. In the Balkans, relatively little heroin is seized, suggesting that the route is exceedingly well organized and lubricated with corruption.[68] In 2008, the countries and territories that comprise South-East Europe (a total of 11 countries, including Greece and Cyprus) seized 2.8 mt of heroin in 2008. This is in sharp contrast to what is seized upstream in Turkey (15.5 mt in 2008) and the Islamic Republic of Iran (32 mt in 2008) every year. In other words, for every kg seized in the South East Europe, nearly 6 are seized in Turkey and 11 in the Islamic Republic of Iran. Given that approximately 85-90 mt travel through this region, this suggests inadequate controls and poor cooperation in a region where high levels of unemployment and low salaries also create incentives for corruption.

The total quantity of heroin seized in West and Central Europe, as reported by some 45 countries, was around 7.6 mt in 2008, which again is only a fifth of the total amount seized in Turkey and the Islamic Republic of Iran in 2008. In all, three countries - the United Kingdom (18%), Italy (14%) and Bulgaria (13%) – accounted for almost half of the total amount seized in the EU and EFTA countries in 2008. Across Europe, many countries directly straddling the main heroin trafficking routes report rather low levels of heroin seizures, such as Montenegro (18 kg in 2008), Bosnia and Herzegovina (24 kg), the former Yugoslav Republic of Macedonia (26 kg), Hungary (28 kg), Albania (75 kg), Austria (104 kg), Slovenia (136 kg), Croatia (153 kg) and Serbia (207 kg).

Organized crime in the Balkans involves a large variety of criminal activities and as such, heroin is but one, albeit among the most lucrative, commodities illicitly trafficked through this region. The profits accrued as the opiates move downstream are substantial. Organized crime groups managing heroin trafficking between the Islamic Republic of Iran and Turkey and on to the Balkans are estimated to earn around US$8,000 per kg of heroin or a total of US$600-700 million per year. The routes through this region also operate in the reverse direction with cocaine, precursor chemicals and amphetamine-type stimulants (ATS) moving eastward into Turkey and beyond. Organized crime groups controlling these corridors thus have comparatively better access to more numerous and diversified crime markets than their Northern route counterparts. Thus, many tend to be poly-drug (heroin, cannabis et cetera) and poly-crime (trafficking in human beings, weapons and stolen vehicles, to name but a few).

Another notable feature of the Balkan route is that some important networks have clan-based and hierarchically organized structures. Albanian groups in particular have such structures, making them particularly hard to infiltrate. This partially explains their continued involvement in several European heroin markets. Albanian networks continue to be particularly visible in Greece, Italy and Switzerland. Italy is one of the most important heroin markets in Europe, and frequently identified as a base of operation for Balkan groups who exploit the local diaspora. According to WCO seizure statistics, Albanians made up the single largest group (32%) of all arrestees for heroin trafficking in Italy between 2000 and 2008. The next identified group was Turks followed by Italians and citizens of Balkan countries (Bulgaria, Kosovo/Serbia, the former Yugoslav Republic of Macedonia and to some extent Greece). A number of Pakistani and Nigerian traffickers were arrested in Italy as well.

Most of the Balkan heroin first passes through Bulgaria, a country which has reported some fairly large heroin seizures in the past, but where figures have been erratic, despite little evidence of fluctuation in the flows. In 2008 for example, Turkey seized some 15 mt of heroin while Bulgaria, despite being the recipient of most of the Balkan route flow, seized 1.1 mt. In Bulgaria, most of the arrested heroin traffickers are nationals of that country. However, the proportion of Turkish nationals also stands out. The other main nationalities are citizens of the Balkans such as Serbs and Macedonians. Notably, Albanians are near-absent.

The Netherlands is a hub for heroin trafficking to France, the United Kingdom, Belgium, as well as Germany. In the Netherlands, the total number of arrests made by customs authorities is limited. Dutch, Nigerian

67 Serious Organised Crime Agency, *The United Kingdom Threat Assessment of Organized Crime*, October 2009, p.26.

68 Interception rates in the Balkan region are very low (3%), especially when compared with Turkey (16%) and the Islamic Republic of Iran (23%).

Fig. 14: Nationality of heroin traffickers arrested in Italy, 2000-2008

Source: World Customs Organization

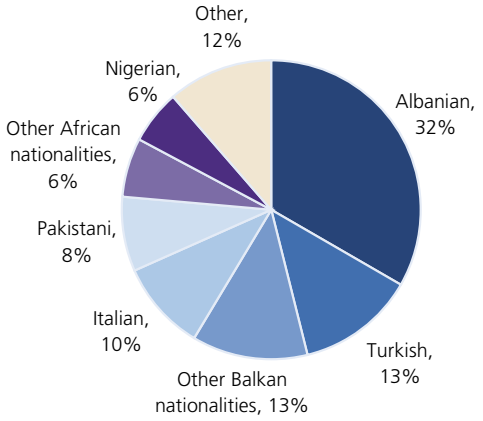
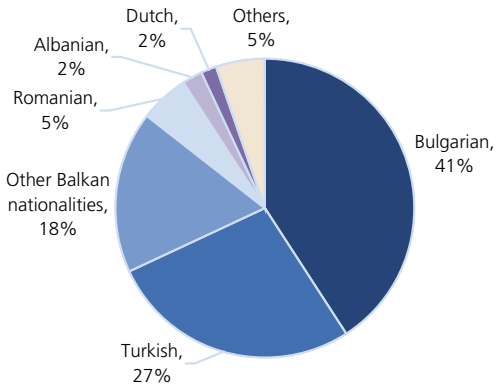


Fig. 15: Nationality of heroin traffickers arrested in Bulgaria, 2000-2008

Source: World Customs Organization



and Turkish nationals are nearly equally represented, while Balkan nationals are conspicuously absent.

In Germany, the number of Turks arrested for heroin trafficking outnumbers all other nationalities except Germans. Dutch citizens represent 5% of all heroin trafficking arrests and generally enter the trafficking chain only after the heroin has arrived in Germany or in trafficking the heroin from the Netherlands back into Germany. Balkan nationalities make up a minority of arrestees in Germany, followed by Nigerian nationals.

In the United Kingdom, British citizens predominate, but a considerable number of Dutch citizens also show up in arrest statistics. The proportion of arrested Turkish, German, Pakistani and Belgian nationals was considerably smaller than Dutch or British nationals between 2000 and 2008. Here too Balkan nationalities comprised a negligible percentage of all heroin trafficking arrests.

Heroin trafficking from the Turkey-Bulgaria and Turkey-Greece borders to the main heroin markets in the United Kingdom, France, Germany and the Netherlands is organized by multi-ethnic groups. Locally-based organized crime groups generally traffic heroin within the destination (main consumer) countries. In Germany and the United Kingdom, for example, German and British groups, respectively, operate heroin distribution networks. In transit countries, south-east European and Turkish organized crime groups cooperate. The involvement of local groups in transit countries varies from country to country. In Austria, for example, the number of Austrians arrested for heroin trafficking between 2000 and 2008 was negligible, with most arrestees holding Turkish, Hungarian, Nigerian or Iranian citizenship. In

Fig. 16: Nationality of heroin traffickers arrested in the Netherlands, 2000-2008

Source: World Customs Organization

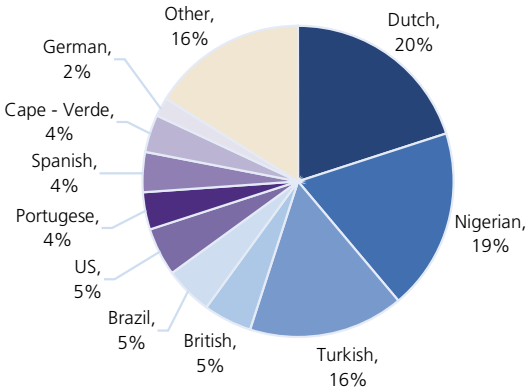


Fig. 17: Nationality of heroin traffickers arrested in Germany, 2000-2008

Source: World Customs Organization

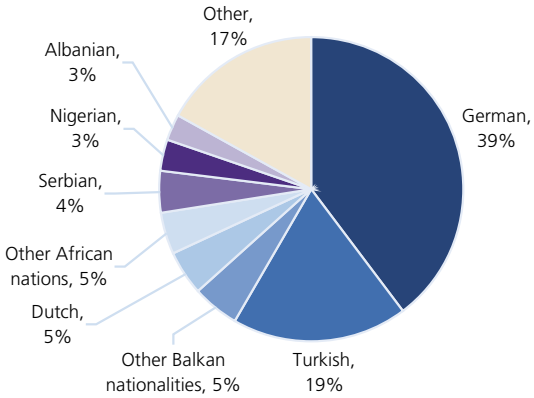
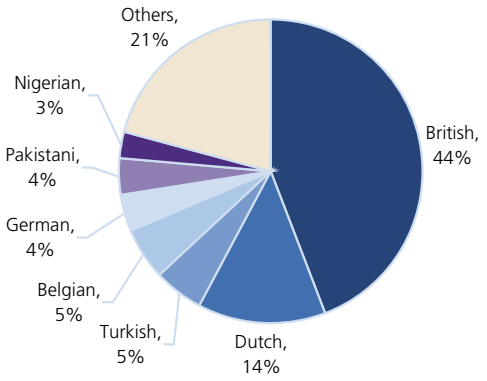


Fig. 18: Nationality of heroin traffickers arrested in the United Kingdom, 2000-2008

Source: World Customs Organization



neighbouring Hungary, by contrast, the number of Hungarian nationals arrested for heroin trafficking during the same period was comparable to that of other nationalities.

Shared ethnicity and language undoubtedly helps smugglers to facilitate opiate trafficking from the source, through the Iran-Pakistan and Afghanistan-Pakistan borders all the way to the Turkish border and beyond. At the same time, different ethnic groups cooperate seamlessly. This includes Kurdish and Turkish groups as well as Bosnian, Serb, Albanian and Croat groups further downstream. The 2010 US International Narcotics Control Strategy Report argues, regarding trafficking in the Balkans, that 'elements from each ethnic group and all major crime "families" are involved in the narcotics trade, often collaborating across ethnic lines.'

Impact of this flow

The first and most direct impact of opiates is on health, including heroin-related deaths. Opiates (including synthetics) account for 35% to almost 100% of all drug-related deaths in the 22 European countries that have provided data, and over 85% in 11 of those countries.[69] In addition, heroin abuse by injection contributes to high rates of serious diseases such as hepatitis B, hepatitis C and HIV.[70] The HIV epidemic among injecting drug users continues to develop at varying rates across Europe. In the countries of the European Union, the rates of reported newly diagnosed cases of HIV infection

69 European Monitoring Center for Drugs and Drug Addiction (EMCDDA), *Drug situation in Europe: Drug-related infectious diseases and drug-related deaths*, November 2009.

70 Hepatitis C (HCV) is more prevalent than HIV among injecting drug users across Europe. HCV antibody levels among national samples of injecting drug users in 2006 and 2007 vary from 18% to 95%, with half of European countries reporting levels in excess of 40%.

Table 7: Subregional distribution of heroin consumption in Europe

Source: UNODC

Region	Heroin consumption (mt)
East Europe	4.4
Southern Europe	2.4
West and Central Europe	80
Total	**87**

among injecting drug users are mostly at stable and low levels, or in decline. However, in post-soviet European countries such as Ukraine, Belarus and the Republic of Moldova, those rates increased in 2007.[71] Finally, the term 'transit country' may not adequately apply to the Islamic Republic of Iran, given the ravages of opiates in the country. There are around 1 million opiate users in the Islamic Republic of Iran and approximately 14 mt of heroin and 450 mt of opium are consumed in-country.[72] The Islamic Republic of Iran appears to have one of the highest rates of heroin addiction per capita in the world: 20% of Iranians aged 15 to 60 are involved in illicit drug use, and 9% - 16% inject drugs.[73] But the lethality of heroin is even more direct on the Islamic Republic of Iran's borders where 3,500 casualties among the border guards are a reminder of the risks taken by law enforcement officials to stem this deadly flow.

Europe is the most important market in terms of volume and turnover for Afghan heroin, with around 250 kg of heroin (of 70% purity) consumed on a daily basis. Annually this represents some 85-90 mt of heroin and a value of some US$20 billion. Most of it, approximately 80 mt, is thought to be consumed in Western and Central European countries. The European market is far from homogenous as four main national markets, the United Kingdom (21%), Italy (20%), France (11%) and Germany (8%) together account for about 60% of consumption in Europe.

Opiate trafficking also fuels corruption and all countries on the Balkan route are affected. The combined GDP of Kosovo/Serbia, the former Yugoslav Republic of Macedonia and Albania at US$20 billion is equivalent to the value of West-Europe's heroin market. The opiate trade is a serious threat to the Balkans; particularly vulnerable

71 European Monitoring Center for Drugs and Drug Addiction (EMCDDA), *Drug situation in Europe: Drug-related infectious diseases and drug-related deaths*, November 2009.

72 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009, p.25.

73 Razzaghi E, Movaghar A, Green TC, Khoshnood K. 2006. "Profiles of risk: a qualitative study of injecting drug users in Tehran, Iran." *Harm Reduct J,* Vol. 3, No. 12, doi:10.1186/1477-7517-3-12 in "Mapping and Situation Assessment of High-Risk Key Populations in Three Cities of Afghanistan", World Bank, September 2007, p.4.

are Kosovo/Serbia, Bosnia, the former Yugoslav Republic of Macedonia and Albania. A number of unresolved conflicts and/or remaining inter-ethnic tensions along sections of this route continue to prevent the emergence of effective regional counterdrug cooperation and to facilitate trafficking.

1.2.4 The Southern route

Unlike the Northern or Balkan routes, which are mostly dedicated to single destination markets, the southern route serves a number of diverse destinations, primarily Europe, Africa and Asia, and even a limited quantity going to the United States and Canada. In truth, the only opiate destination market seemingly *not* targeted through this route is the Russian Federation. It therefore seems more accurate to talk about a vast network of routes rather than one general flow direction.

Routes and volumes

Pakistan is geographically vulnerable to opiate trafficking; UNODC estimates that approximately 40% of Afghanistan's heroin/morphine (150 mt) transits or is consumed in Pakistan. More Afghan opiates pass through Pakistan than any other country bordering Afghanistan. Controlling this border is a major challenge; the long, thinly guarded boundary (2,500 km) follows a chain of mountains with long sections reaching altitudes of more than 4,000 metres gradually ceding to open plains and dunes in Balochistan province facing southern Afghanistan. The most important points for all trade, both licit and illicit, on the Pakistan-Afghanistan border are the Torkham crossing in the Federally Administered Tribal Areas (FATA) and the Chaman checkpoint in Balochistan province. In addition to these, there are hundreds of natural passes and desert roads coursing across the entire border, most of which are unmanned and unsupervised.

In recent years, a cross-border insurgency has precluded effective law enforcement work in much of the FATA and in parts of Balochistan province. The biggest vulnerability, however, is Pakistan's immediate proximity to heroin processing zones in Afghanistan, notably the adjoining provinces of Hilmand, Nimroz and Kandahar. Every day, finished heroin is smuggled into Pakistan using multiple methods of transportation, including the wide usage of camels and pack animals. Not only heroin but unrefined opium and semi-refined morphine are shipped across these borders, as seizure data demonstrates. In 2006, Pakistan seized approximately 32,658 mt of morphine or 72% of global seizures. This is a huge 18-fold increase over seizures in 2001, which totaled 1,825 kg.[74] Since then, morphine seizures have dropped by two thirds in 2007 (10,989) and again by a third in 2008 (7,324).[75] Seizures of opium nearly doubled from 2007 (15,369) to 2008 (27,242) and Pakistani users consume approximately 80 mt of opium annually, most of it sourced in Afghanistan. A portion of heroin never leaves Pakistan, either due to absorption into the domestic market (estimated to consume approximately 20 mt of heroin annually)[76] or seizures (9.2 mt of heroin in 2008).

The remaining opiates (mostly heroin) flow out of Pakistan in multiple directions, starting with the major consumption markets next door in China, India and the Islamic Republic of Iran. The following are the major routes identified:

- From eastern Afghanistan into the FATA, opiates are trafficked in three main directions: 1) towards China via Gilgit (northern areas) by road; 2) towards India through the NWFP-Chakwai/Rawalpindi-Sailkot-Wagha route; 3) towards Karachi via the North Western Frontier Province (NWFP)-Rawalpindi-Chawai-Faisabad-Mutan-Sukkur route.
- From Balochistan (mostly the cities of Dalbandin and Quetta) towards eastern Islamic Republic of Iran by road and rail for onward movement towards Turkey and Western Europe. Towards Gwadar port or the smaller fishing ports and open areas of the Makran coast or the main ports of Karachi and Port Qasim and further to international destinations via air or sea, mostly using cargo containers.

Although significant quantities are shipped from Eastern Afghanistan into FATA, the Pakistani province of Balochistan is the primary transit area, both for shipments that exit via the Pakistani coast and those which travel through Pakistan to the Islamic Republic of Iran. This is a significant flow in itself with almost a quarter of the heroin flow (or 35 mt) veering west towards the Iranian border and blending into the Balkan flow destined for Europe.

Europe, an especially lucrative market, is also targeted by Pakistani traffickers who operate numerous air (and sea) trafficking routes from Pakistan to Europe (mostly the United Kingdom and the Netherlands), shipping an estimated 5 mt annually via these direct connections.[77]

Approximately 2 mt of heroin are shipped to the United States and Canada annually, through various routes, including directly in cargo planes.[78]

Over the past decade, China appears to have received an increasing amount of Afghan opiates, approximately 7 mt (out of an estimated total 55 mt of heroin trafficked

74 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, UNODC, p.34.

75 ARQ, Pakistan, 2008.

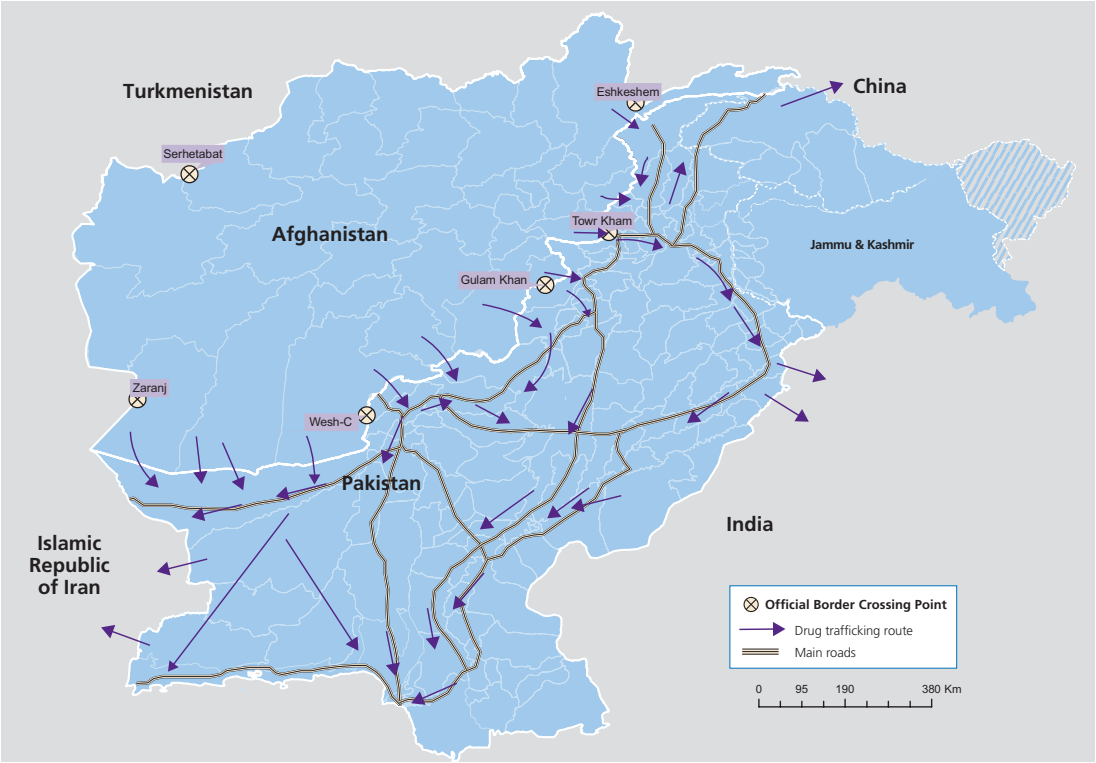
76 UNODC, *Addiction, crime and insurgency*, p.25.

77 Ibid., p.34.

78 In July 2009, the Royal Canadian Mounted Police seized over 120 kg of heroin that had been shipped from Pakistan.

Map 5: Drug trafficking routes in Pakistan

Source UNODC



to China annually) of which were sourced from Pakistan in 2008.[79] A proportion of this amount is thought to traverse Pakistan's northern areas towards China's Xinjiang province.

UNODC now tentatively estimates that Pakistan is Africa's main supplier of heroin at approximately 20 mt a year. In addition to the aforementioned direct routes into the United Kingdom/the Netherlands, Pakistani traffickers - in collusion with African crime groups - ship perhaps an additional 2-3 mt into Europe using Africa as a trans-shipment point.[80]

Karachi is a major sea conduit for shipments to Gulf countries and further to East and Southern Africa and various destinations in China. Approximately 11 mt are estimated to be trafficked into the United Arab Emirates (mostly Dubai) for onward shipping to these two destinations.[81]

Pakistani traffickers also operate routes through Lahore and other northern cities into India (mainly by road). There are a large number of other air/road and sea routes servicing numerous other Asian countries for a total flow of approximately 25 mt.[82] Additionally, some routes proceed in seemingly counter-intuitive directions. As an example, in June 2007, Kyrgyz authorities arrested a Nigerian who had organized trafficking from Pakistan to Tajikistan and onward to CIS countries, Europe and Australia. Another route reported by Central Asian authorities involved multiple couriers starting in Pakistan and onward to the Islamic Republic of Iran-Azerbaijan-Turkey towards a final destination city in China.[83]

79 UNODC, *Addiction, crime and insurgency*, p. 48.

80 In Africa, Nigeria, South Africa and Ghana are the main African States sourcing to Europe; see UNODC *Addiction, crime and insurgency : the transnational threat of Afghan opium*, p.38.

81 Individual seizure data provided by the UAE indicates that at least 50% of the heroin seized in the UAE was headed to Africa, and the rest to China; see UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, p.48.

82 UNODC, *Addiction, crime and insurgency: the transnational threat of Afghan opium*, 2009, p. 59.

83 CARICC Information Bulletin N.48.

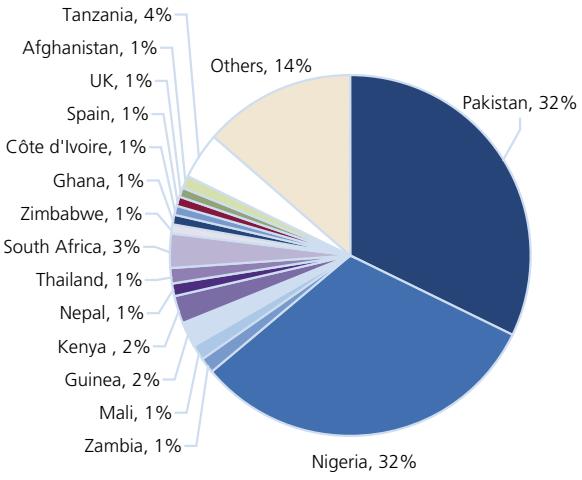
How does the market operate?

The first stage of the route offers relatively few challenges to experienced traffickers, many of whom belong to ethnic groups that live on both sides of the border. In Balochistan, drug trafficking convoys consist mostly of Baloch traffickers receiving from Pashtuns in Afghanistan and delivering to the Islamic Republic of Iran, Karachi, or launches from the Balochistan coast (Gwadar and Pasni ports). These convoys are heavily militarized and intimidation/violence occurs all around their business, including in areas of Balochistan that suffer from having very low penetration of government security forces. Many important traffickers are based in Quetta (Balochistan) and some are Afghans who have relocated there following law enforcement operations in southern Afghanistan.

Trafficking from eastern Afghanistan into the FATA generally involves the use of mountain trails and pack animals. Violence is rarely reported during crossings (which often occur at night). The cross-border trade is under the control of several prominent cross-border Pashtun tribes, notably the Afridi and Shinwari, but also others such as members of the Mohmand and Waziri sub-tribes. To offload further in Pakistan, whether in Karachi or on the Makran coast, traffickers rely on high-level political protection and connections between Afghans and powerful people in Sindh and Punjab provinces.

Fig. 19: Breakdown by nationality of arrested heroin traffickers in Pakistan, 2008

Source: World Customs Organization



With the possible exception of Iran-bound opiates, African traffickers – the majority West Africans - are pivotal to the international trafficking of heroin. Groups often have a large and varied pool of couriers to employ. These may be Filipinos, Indonesians, Pakistanis and Chinese nationals but also West Africans. Among West African groups, Nigerians are especially active as attested in arrest figures. These groups tend to be organized along tribal/ethnic lines with loose network structures.[84]

West African groups traffic to multiple destinations, including China, India and Africa. This type of trafficking usually involves the use of air routes (from the airports of Peshawar, Islamabad, Lahore, Karachi and Quetta) to transit points like Dubai and onward to Nigeria and other West African countries.[85] The use of post parcels is also widely reported.

Africa is both a market and a staging point for other destinations. According to ANF reports, African traffickers "have created two networks: a supply network from Pakistan to Africa and a redistribution network from Africa to Europe and North America and elsewhere."[86] In destination markets like Europe, West African networks rely on their respective diaspora as a base for their activity (importation and retail distribution of heroin). Recruiting European nationals as couriers to bring heroin by air to Europe has also been reported.

The use of air routes is significant; over 37% of Pakistan's total heroin seizures in 2006 took place at airports.[87] Couriers typically attempt to either conceal opiates in luggage or body carry them out of Pakistan.

The extent to which African groups collaborate with Pakistani groups in smuggling ventures remains unclear. According to the US State Department INCSR 2010, drug trafficking organizations in Pakistan are still fragmented and decentralized but there is a trend towards specialization. Clearly, the market is not closed to outsiders, as Nigerians alone account for fully 32% of drug trafficking arrests in 2008. Rather it appears that Nigerians (and other African groups) overlap in some cases with Pakistani groups, both in Pakistan and in some destination markets (Africa and China)

Annually, UNODC estimates that the revenue generated by Afghan opiate trafficking to and through Pakistan exceeds US$1 billion, while emphasizing that this excludes the revenue from illicit trading in associated precursor chemicals. In the past few years, most large (multi-ton) seizures have occurred at the port of Karachi but chemicals may also be trafficked to Pakistan in small lots from China and/or India, two major producers. It is notable that Pakistan's acetic anhydride seizures surpassed Afghanistan's in 2008.[88] There is an increasing

84 Joergen Carling, *Migration, Human Smuggling and Trafficking from Nigeria to Europe*, International Peace Research Institute, Oslo (PRIO), 2006.

85 Anti Narcotic Force Pakistan, *Analysis of domestic seizures 2006*.

86 Ibid., p.14.

87 UNODC Pakistan country office, *Illicit drug trends in Pakistan*, April 2008, p.23.

88 According to information provided by the UNODC Pakistan country office, in 2008, Pakistan reportedly seized over 15,000 litres of acetic anhydride in three separate seizures.

information flow on precursor trafficking through Pakistan and this is directly related to the country's openness to observation and international cooperation. There remain, however, serious information gaps on precursor procurement networks and the illicit precursor trade in general.

Impact of this flow

As with the Islamic Republic of Iran, Pakistan's high levels of opium and heroin use are fuelled by the easily available supply. The latest assessment of drug use in Pakistan took place in 2006 and estimates the number of chronic opiate users at 628,000, of which around 500,000 are heroin users.[89] To put these numbers in perspective, this is twice the numbers found in Central Asia[90] and ten times the numbers found in Afghanistan.

A 100% increase in injecting drug use was estimated between 2000 and 2006. There is currently a concentrated, but localized, HIV epidemic among injecting drug users (IDUs) in Pakistan. Coupled with widespread risk behaviour, this could lead to an HIV epidemic among the wider population. Surveys in several cities of Pakistan have confirmed substantial epidemics of HIV among IDUs.[91] One study in Karachi revealed an increase in HIV prevalence among IDUs from 1% in 2004 to 26% in March 2005,[92] while a more recent study found that HIV prevalence among IDUs has reached 24% in Quetta (along the border with Afghanistan).[93] The increase in the number of IDUs has complicated drug treatment and requires trained service providers.

As in neighbouring Afghanistan, drugs in Pakistan are inseparably entangled with corruption and insecurity. Currently, Pakistan's efforts against the trafficking of Afghan opiates (and the cultivation of opium poppy) are constrained by a major cross-border insurgency and the threat of violent extremism, which has monopolized the attention of law enforcement agencies. One example is the restive Federally Administered Tribal Areas (FATA) which was opium poppy-free for several years until 2003/2004, but where there has been a re-expansion of cultivation.[94]

89 According to the 2008 UNODC survey *Illicit drug trends in Parkistan* there are 482,000 heroin users in Pakistan.

90 Prevalence was revised downwards to 0.7% of the adult population. However, this assessment was not methodologically sound and it is suspected that opiate use in Pakistan is much higher than the numbers it returned.

91 National AIDS Control Programme of Pakistan, *HIV Second Generation Surveillance in Pakistan: National Report – Round 1*, 2005.

92 Emmanuel F, Archibald C, Altaf A; "What Drives the HIV Epidemic among Injecting Drug Users in Pakistan: A Risk Factor Analysis", XVI International AIDS Conference, 13-18 August 2006, Toronto, Canada.

93 Achakzai M, Kassi M, Kasi PM, "Seroprevalences and Co-infections of HIV, Hepatitis C Virus and Hepatitis B Virus in Injecting Drug Users in Quetta, Pakistan", 2007, *Tropical Doctor*, 37(1):43-5.

94 According to the US Government, Pakistan cultivated 1,779 ha in 2009 with a potential opium production of approximately 44 mt. The majority of this cultivation occurs in the Federally Administered Tribal Areas (Khyber, Bajaur, and Mohmand); see Bureau of International Narcotics and Law Enforcement Affairs, *2010 International Narcotics Control Strategy Report (INCSR)*, March 2010.

1.2.5 Implications for response

Drug control in the era of globalization faces a number of challenges, from a cultural shift in consuming societies - which sees some forms of drug use as increasingly acceptable - to the dismantling of barriers to global trade. The latter poses acute challenges to border controls, which still require substantial strengthening, particularly in the Balkans, Central Asia, South Asia and along the Pakistan-Afghanistan border. The level of global sea, air and land transportation will continue to increase. As an example, according to the International Association of Ports and Harbours container traffic is expected to double by the year 2012, compared with 1999 figures. At present, more than 220 million sea containers move around the globe per year with approximately 90% of the world's cargo shipped via container. Scanning or searching every single container, load and vehicle is practically impossible. Traffickers are well aware of these limitations and frequently target the busiest ports of entry. International information exchange and cooperation should therefore be the pillar of any global counter-narcotics strategy. Practically speaking, this should include increased support for regional information collection and coordination bodies such as the Joint Planning Unit (JPU) in the Islamic Republic of Iran, the Southeast European Cooperative Initiative (SECI) centre in the Balkans and the Central Asian Regional Information and Coordination Centre (CARICC) in Central Asia, which would enhance capacities for expanded cooperation in the future.

Like any other industry, the opiate market follows the laws of demand and supply, and also react to economic stimulus and pressures. The geographic concentration of opiate production in Afghanistan is unique. It is tempting to think that if control could be maintained over a few provinces in one of the poorest countries on earth, one of the world's most intractable drug problems could be solved overnight. Experience has shown, however, that markets quickly adjust, and that production soon re-emerges to meet an established demand. This perspective may also have led to a disproportionate focus on production in Afghanistan, at the cost of efforts in other parts of the market chain. It is thus imperative that the market be tackled as a whole, including both supply and demand. The international community needs to strengthen the link between supply and demand reduction measures and to better integrate national efforts in the framework of an international strategy on the scale of the market. To do both, getting a better understanding of the transnational heroin economy is a matter of urgency.

1.3 The global cocaine market

Cocaine has been a popular recreational drug for decades, and while demand appears to be on the wane in its largest markets, it has gained popularity in an ever widening range of countries. 'Cocaine' comprises at least two distinct drug products: powder cocaine on the one hand, and a range of cocaine base products, mostly falling under the heading of 'crack', on the other. Powder cocaine produces a more subtle effect, is more expensive to use, and has become emblematic of economic success in some circles. Demand has emerged in many developing countries, particularly among elites. Crack is cheaper, more intense, and associated with prostitution and street crime. Traditionally, crack use was rare outside the United States of America and the United Kingdom, but this also appears to be changing, especially in Latin America and parts of Africa.

Starting in the 1960s and 1970s, global production, trafficking and consumption of cocaine rose strongly. Until the mid-1960s, global cocaine seizures were measured in the tens of kilograms annually. In recent years, they have been in the hundreds of tons. Based on seizure figures, it appears that cocaine markets grew most dramatically during the 1980s, when the amounts seized increased by more than 40% per year. The number of countries reporting cocaine seizures has also grown during this period, from 44 in 1980 to 87 in 1990 and 123 in 2008.[1]

1 UNODC ARQ.

1.3.1 Dimensions

Supply, demand and value

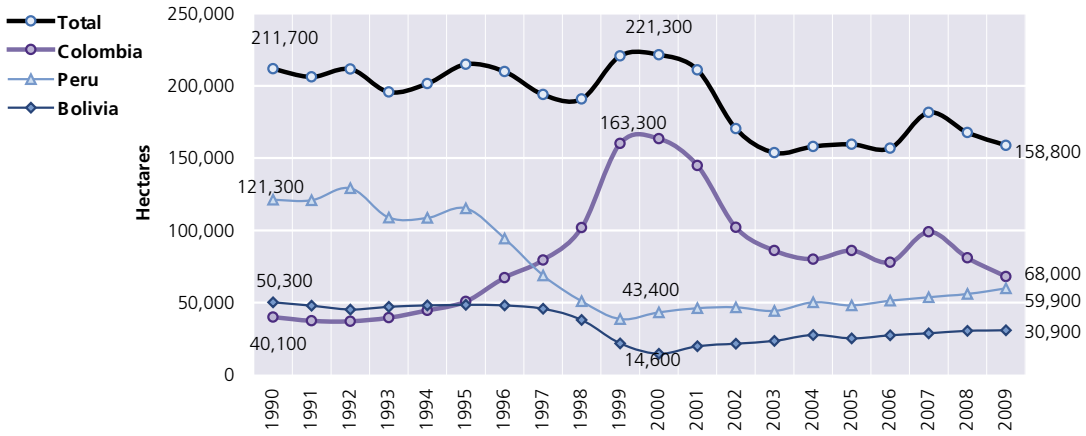
The extent as well as the pattern of global cocaine production have changed significantly over the last four decades. From the end of World War II until the late 1990s, almost all the world's coca bush (the raw material for the manufacture of cocaine) was grown in Peru and the Plurinational State of Bolivia, and since the 1970s, most of this output was refined into cocaine in Colombia. This increased over time and, in 1997, coca cultivation in Colombia exceeded that of the traditional growers for the first time.

In the twenty-first century, the pendulum has swung back again. Coca cultivation in Colombia decreased by 58% between 2000 and 2009, mainly due to large-scale eradication. At the same time, it increased by 38% in Peru and more than doubled in the Plurinational State of Bolivia (+112%), and both of these countries have acquired the ability to produce their own refined cocaine. Despite the increases in Peru and the Plurinational State of Bolivia, the net decline in the global area under coca cultivation over the 2000-2009 period was significant, amounting to 28%. A far smaller area is now under coca cultivation than in any year of the 1990s.

In 2008, an estimated 865 metric tons (mt) of pure cocaine were produced. This was the lowest level in five years and considerably less than a year earlier when over 1,000 mt were produced. A further decline on a year earlier seems to have taken place in 2009 though final figures for 2009 are not yet available. In 2008, Colombia appears to have been responsible for about half of

Fig. 20: Global coca bush cultivation (ha), 1990-2009

Source: UNODC



global production, with Peru contributing over one third and the Plurinational State of Bolivia making up the balance.

The process of analysing the production of cocaine is complex, though, because the amount of cocaine that can be produced out of a given plot of land varies over time and between areas. Productivity has grown in some areas due to improvements in both farming and processing techniques, but eradication has pushed some cultivation into less suitable areas, decreasing yields. Improvements in laboratory efficiency increased again cocaine production. In the end, the hectares of cultivation (determined through satellite and ground surveys) are multiplied by an average kilogram-per-hectare coca leaf yield figure and coca-leaf to cocaine transformation ratios to generate a cocaine production estimate. When these ratios are updated, they can create misleading year-on-year trends (like those seen between 2003 and 2004). The long-term trends should be more accurate (provided the coca yields and transformation ratios were accurately measured). It appears that, despite radical changes within countries, total cocaine output has been fairly stable over the last decade. This perception may still change, however, once updated and properly verified information on the different ratios for the different countries (and for the various coca producing regions in these countries) becomes available.

Global cocaine seizures have grown greatly over the last decade, suggesting that a declining amount of the drug is actually reaching the markets - unless there is more production than presently accounted for. Most of the increase in seizures came from South America while

Fig. 21: Global cocaine production, 1990-2008

Source: UNODC

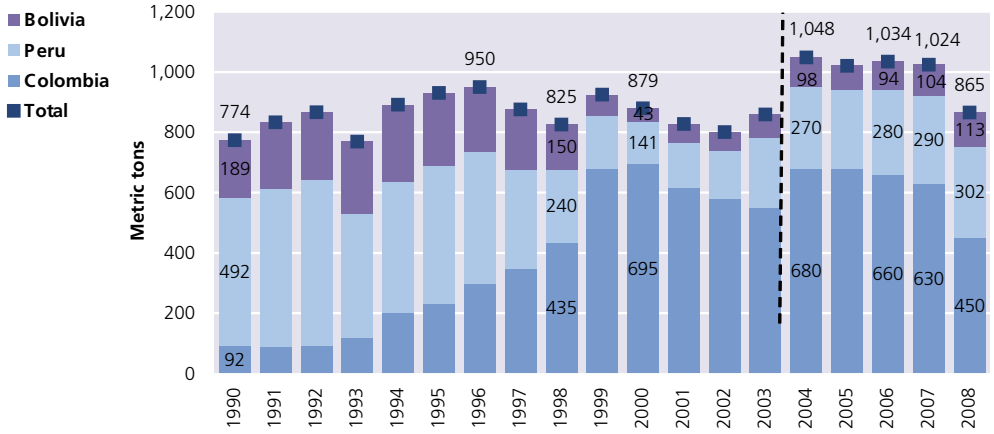
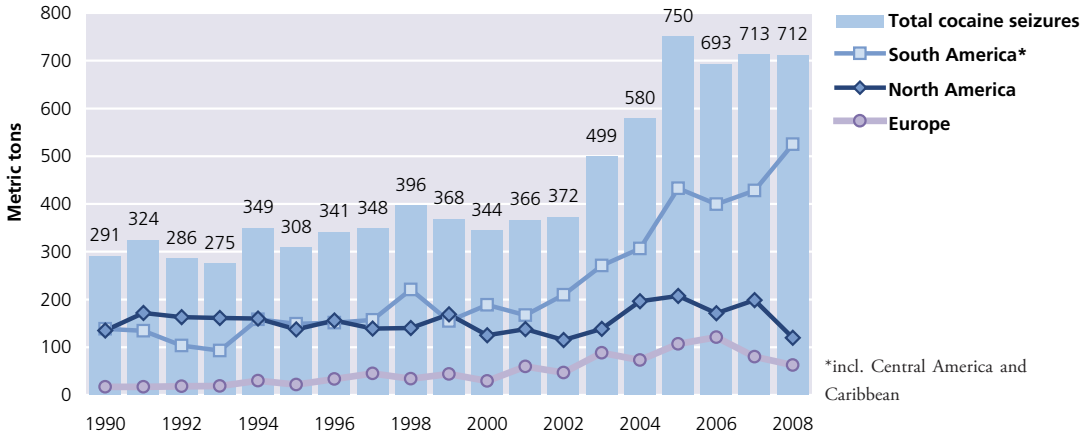


Fig. 22: Global cocaine seizures (unadjusted for purity), 1990-2008

Source: UNODC DELTA



seizures in North America and Europe declined between 2006 and 2008. Since 2001, Colombia has seized more cocaine than any other country in the world, and seizures have also increased strongly in Central America.[2] Enhanced international cooperation has meant that many shipments are seized before they leave their source country, or before they reach their final destination.

But here again, the analysis is complex because production estimates are made on the basis of pure cocaine, and most seizures consist of a product of uncertain dilution. It appears that the purity of cocaine shipments is declining. Traditionally, they have been around 60% cocaine, but the average purity[3] reported to UNODC declined to 58% in 2007 and 51% in 2008. Keeping these considerations in mind, it appears that a large share of the cocaine produced is seized: around 42%.[4] This share has increased dramatically from a decade ago, when the figure was closer to 24%.

Once purity is accounted for and seizures deducted, it seems that the amount of cocaine available for consumption fell from over 700 mt in the mid-1990s to around 500 mt in 2008.[5]

How does this tally with what is known about global cocaine consumption? Knowledge about cocaine consumption is based on household surveys. Unfortunately, few countries have annual household surveys on drug use, and in some areas of the world (mostly in Asia and Africa), few such surveys have ever been conducted. In keeping with this uncertainty, starting last year, UNODC presents use rates as ranges, rather than point estimates.

In many cases, though, the reason why a survey has not been undertaken is because there is good reason to believe that widespread drug use is unlikely. As a result, the best point estimates are often toward the bottom of the range of uncertainty. For example, it is theoretically possible that cocaine use is widespread in China and India, since no national survey data exist to establish the level of use in either country. But based on what is known about cocaine production, trafficking patterns and the countries themselves (derived from seizures, arrests, treatment and qualitative information), this is highly unlikely. Taking just these two countries out of the picture can have a dramatic effect on global use estimates.

Based on the best reading of the available data, the number of people who consumed cocaine at least once in the previous year may have increased by around 14% between the late 1990s and 2008, with the rate of annual cocaine use basically stable in the last decade, at about 0.4% of the adult population (16 million people in 2008; range: 15-19 millions).

2 It is possible that some of this rise was due to double counting. Enhanced international cooperation could lead to several countries reporting a single cocaine seizure as their own.

3 Unweighted average of wholesale and retail purity data reported by Member States to UNODC in a given year.

4 If reported purities were weighted by the amounts seized, the calculated average purity would be higher, which would result in an even higher interception rate. However, some of the reported seizures are inflated due to double counting.

5 Methods to estimate the potential cocaine production in the Andean region are currently under review and could lead to higher estimates than previously reported. While it is too early to predict the outcome of this exercise, it may help answer the questions raised by a decline of the estimated cocaine availability in recent years, while the number of cocaine users was increasing (though in different regions at various stages of market maturity).

Fig. 23: Cocaine production, seizures and supply to markets, 1990-2008

Sources: UNODC *World Drug Report 2009* and DELTA

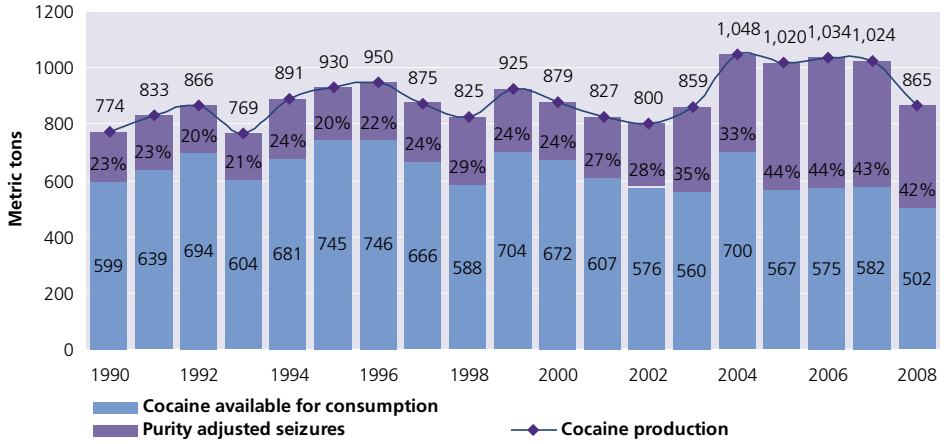
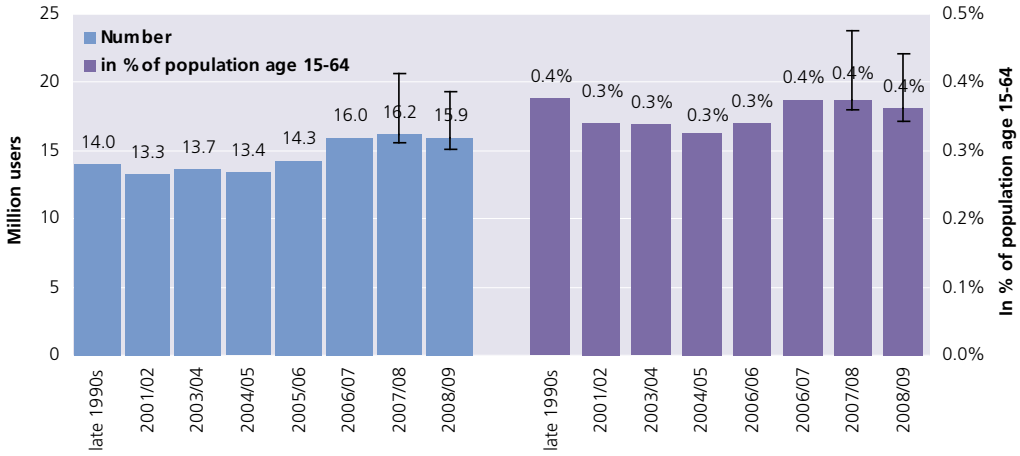


Fig. 24: Annual prevalence of cocaine use at the global level

Sources: UNODC *World Drug Report 2008* and updates based on ARQ



If the amount of cocaine making it to market has declined (from more than 700 mt in the late 1990s to around 500 mt in 2008) while the number of users increased over the past 10 years, then the amount used by each consumer must have declined significantly. Alternatively, one should not exclude the possibility that laboratory efficiency may have increased stronger than is currently reflected in the cocaine production estimates so that global cocaine availability (production less seizures) may have remained stable or increased slightly over the last decade.

How well does all this jell with expert opinion about global drug trends? One of the questions asked in UNODC's Annual Reports Questionnaire (ARQ) concerns perceptions about trends in each drug market. This allows countries who do not conduct surveys to highlight what they see as emerging drug issues. If these responses are amalgamated to create an index,[6] this index is rising, suggesting that a growing number of countries indicate that cocaine is a growing problem. If these responses are weighted by the estimated cocaine-using population, however, the global trend is downwards in recent years, in keeping with the decline in use in the United States, the largest national cocaine market. A clear divergence can be seen between the responses of developed (OECD) and developing countries: use is perceived to be declining in the former and increasing in the latter.

6 For 'strong increase' 2 points are given; for 'some increase '1 point; for stable: 0 points; for 'some decline' 1 point is deducted and for 'strong decline' 2 points are deducted. The average at the global level is then calculated.

Fig. 25: Global trends in cocaine use as perceived by government experts, 1992-2008

Source: UNODC ARQ

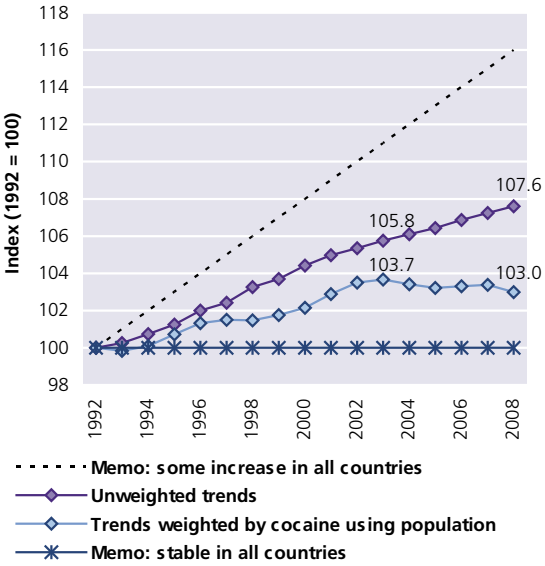
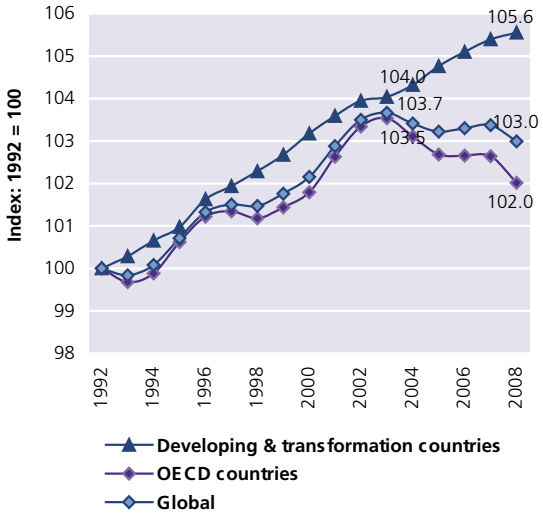


Fig. 26: Global trends in cocaine use, OECD versus non-OECD countries, as perceived by government experts (based on trends weighted by cocaine using population), 1992-2008

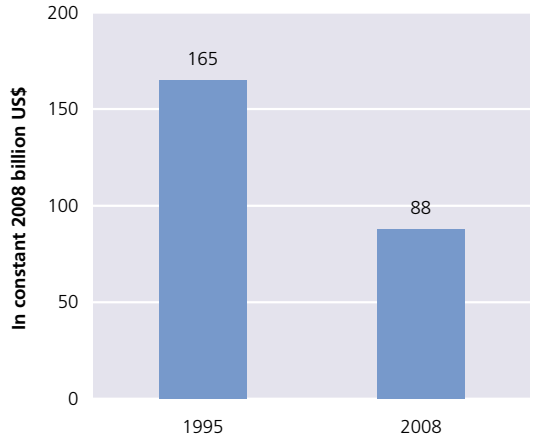
Source: UNODC ARQ



How has this affected the value of the global cocaine market? The value is most certainly lower than it was in the mid-1990s, when prices were much higher and the US market was strong. For 1995, UNODC estimated the retail value of the global market at US$117 billion.[7] Expressed in constant 2008 US dollars, this would be equivalent to US$165 billon in 2008. The corresponding figure for 2008 would be US$88 billion (range: US$80–US$100 bn), suggesting the value has halved in this 13-year period. The global cocaine retail sales were equivalent to 0.15% of global GDP in 2008, down from 0.4% of global GDP in 1995. Nonetheless, the value of global cocaine retail sales in 2008 were still higher than the gross domestic product (GDP) of 123 out of 184 countries for which the World Bank provided estimates for the years 2007 or 2008.

Fig. 27: Global cocaine retail market in billion constant 2008 US$, 1995 and 2008

Source: UNODC estimates[8]

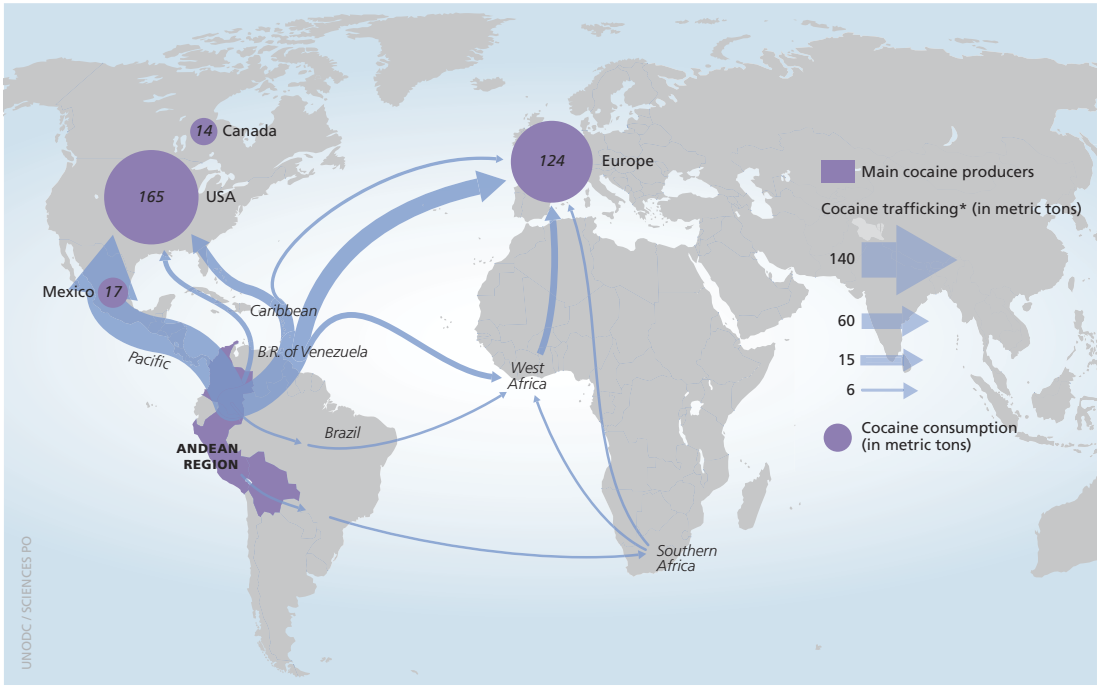


7 UNDCP, *Economic and Social Consequences of Drug Abuse and Illicit Trafficking*, Vienna 1997.

8 UNDCP, *Economic and Social Consequences of Drug Abuse and Illicit Trafficking*, Vienna 1997; World Bank, *World Development Indicators 2009*; UNODC estimates for 2008 based on UNODC ARQ; UNODC, "Estimating the value of illicit drug markets" in UNODC, *2005 World Drug Report*, Volume 1: Analysis, pp. 123-143; ONDCP, *What America's Users Spend on Illegal Drugs*, December 2001; United Nations Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 2008 Revision*, 2009; SAMHSA, *National Survey on Drug Use and Health*, Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports* (2002-2008); ONDCP, *Arrestee Drug Abuse Monitoring Program - ADAM II 2008 Annual Report*, Washington D.C, April 2009; ONDCP, "Cocaine Consumption Estimates Methodology", September 2008 (internal paper); US State Department, *International Narcotics Control Strategy Report*, March 2010; ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report pared by the Institute for Defense Analysis for ONDCP, Washington, July 2008; US Drug Enforcement Agency analysis of STRIDE data; Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008*; Instituto Nacional de Salud Pública, *Encuesta Nacional de Adicciones*, 2008; EMCDDA, *Statistical Bulletin 2009*; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*, Vienna 2009; UK Home Office, *Sizing the UK market for illicit drugs*, London 2001; Home Office, *Measuring different aspects of problem drug use: methodological developments*, Home Office Online Report 16/06, London 2006; and various other Government reports.

Map 6: Main global cocaine flows, 2008

Source: UNODC, *World Drug Report 2009,* and UNODC calculations, informed by US ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper).



Global volume and distribution

Although cocaine use appears to be growing in developing countries, the vast bulk of the production is destined for two major overseas markets: North America (6.2 million users in 2008) and Europe (4 to 5 million users, of which 4.1 million were in the EU and EFTA countries).[9] The largest emerging market in the developing world is seen in the South America, Central America and Caribbean region, with some 2.7 million users. Estimates are far less certain for use levels in Asia and Africa.

Current estimates suggest that about 500 mt of pure cocaine were available for consumption in 2008, of which around 480 mt were actually consumed. The rest was either stocked or lost in transit. Based on what is known about production, seizures, use levels and use rates, a likely global distribution of the 480 mt of cocaine consumed in 2008 is presented in a separate table. This table suggests that more than 320 mt, or around two thirds, is consumed in the mature cocaine markets of North America (41%) and West Europe (26%). Latin America is not far behind, however, suggesting that more attention should be paid to this growing market.

These estimates remain tentative, with substantial uncertainty in Asia and Africa in particular, but they are generally in keeping with the distribution of global cocaine seizures.

Based on this distribution and what is known about prices and purities, it is possible to place a retail value on each regional market. Due to much higher purity-adjusted retail prices, the estimated value of the market in Europe (US$34 billion) is almost as large as that of North America (US$38 billion). Surprisingly, the third largest cocaine market, in economic terms, is the Oceania region, worth an estimated US$6 billion, due to very high retail prices.

Global impact

The use of cocaine constitutes, first of all, a major health problem. Cocaine use results in tens of thousands of deaths each year worldwide. After the opiates, cocaine is the most problematic drug globally, and it is indisputably the main problem drug in the Americas. Out of the 5.3 million people who used cocaine at least once in the United States during 2008, 1.9 million also used cocaine in the previous month, of which almost 1 million were found to have been dependent on cocaine.[10] In other

9 The 27 countries of the European Union (EU) and the four countries of the European Free Trade Association (EFTA).

10 Substance dependence was based on the definition of the 4th edi-

Table 8: Tentative distribution of global cocaine consumption (purity-adjusted), 2008

Source: UNODC estimates[11]

	Estimated number of users (in millions)	Grams per user per year	Amounts of pure cocaine consumed (in mt)	In %
North America	6.2	31.6	196	41%
EU/EFTA	4.1	30.2	124	26%
South America, Central America, Caribbean	2.7	35	95	20%
Africa	1.3	20	26	5%
Asia	0.7	20	14	3%
East and South-East Europe	0.5	26	13	3%
Oceania	0.4	25	11	2%
World (rounded)	**15.9**	**30.1**	**480**	**100%**

Table 9: Tentative distribution of the global cocaine market in billion US$, 2008

Source: UNODC estimates[12]

	Amounts consumed (in mt)	Average retail price (in US$ per gram)	Average purity at retail level	Purity-adjusted prices	Value (in billion US$)
North America	196	108	56%	192	38
EU/EFTA	124	101	37%	273	34
South America, Central America, Caribbean	95	11	66%	17	2
Africa	26	22	34%	65	2
Asia	14	142	73%	195	3
East and South-East Europe	13	125	48%	260	3
Oceania	11	291	53%	549	6
World – total (rounded)	**480**				**88**

words, out of the people who used cocaine in the previous year at least once, 18% were dependent on it. This is a higher proportion than for any other drug except heroin. Figures for the year 2007 showed that out of 1,000 people who used crack cocaine in the previous 12 months, 116 entered treatment for substance abuse, a slightly higher proportion than for methamphetamine (102) and a significantly higher proportion than for drug use in general (30) or for the use of alcohol (6).[13]

While the share has declined, almost half of all people entering drug treatment in the Americas do so due to cocaine (46%), and the share in Europe increased from 3% in 1997/1998 to 10% in 2008. In West Europe, the share is almost 15%.

Trafficking in cocaine also constitutes a security threat, financing organized crime and insurgencies in a number of countries, including the FARC in Colombia and the Shining Path in Peru.

Cocaine trafficking is also linked to corruption. Trafficking in cocaine both thrives on corruption and breeds corruption. Rising trafficking of cocaine via countries neighbouring the cocaine production centres in the Andean region led to rising levels of corruption, while high levels of corruption in a number of West African countries have certainly been a facilitating factor for the establishment of cocaine transit traffic via this region.

tion of the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV).

11 Sources the same as for footnote 8, except UNDCP, *Economic and Social Consequences of Drug Abuse and Illicit Trafficking*, Vienna 1997; World Bank, *World Development Indicators 2009*; ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report prepared by the Institute for Defense Analysis for ONDCP, Washington, July 2008; US Drug Enforcement Agency, based on STRIDE data.

12 Sources the same as for footnote 8, except UNDCP, *Economic and Social Consequences of Drug Abuse and Illicit Trafficking*, Vienna 1997; World Bank, *World Development Indicators 2009;* ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report prepared by the Institute for Defense Analysis for ONDCP, Washington, July 2008; US Drug Enforcement Agency, based on STRIDE data.

13 SAMHSA, *Treatment Episode Data Sets (TEDS)* and SAMHSA, *National Survey on Drug Use and Health.*

Fig. 28: Cocaine as primary drug of abuse among persons treated for drug problems*

* unweighted regional averages.

Sources: UNODC ARQ and *World Drug Report 2006*; UNODCCP, *World Drug Report 2000*

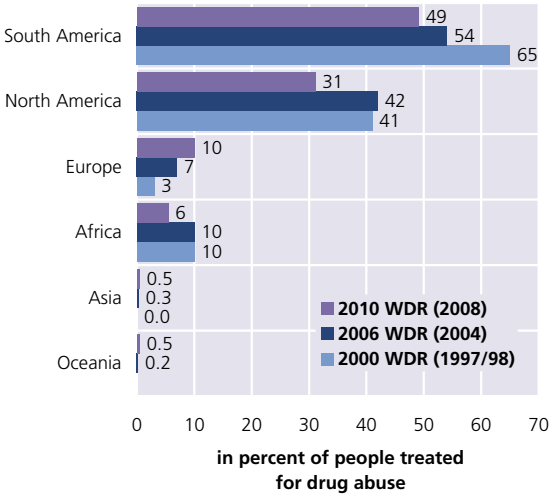
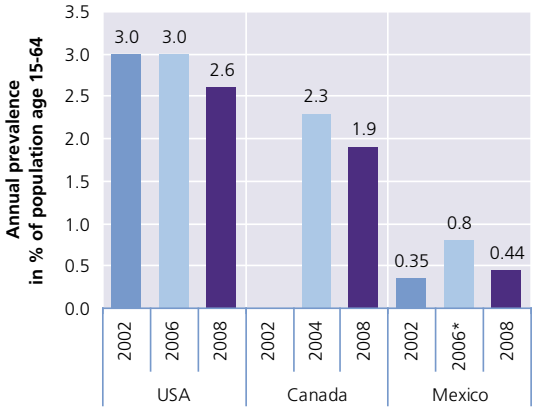


Fig. 29: Annual prevalence rates of cocaine use in North America among the population aged 15-64, 2002-2008

* 2006 data for Mexico: UNODC estimates, extrapolated from household survey results in Mexico City.

Sources: SAMHSA, *Results from the 2008 National Survey on Drug Use and Health (and previous years)*; CONADIC, *Encuesta Nacional de Adicciones 2008*; Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008*; UNODC, *World Drug Report 2009* (and previous years)



1.3.2 Cocaine from the Andean region to North America

North America is the largest regional cocaine market, with some 6.2 million annual users, close to 40% of the global cocaine-using population. The United States remains the single largest national cocaine market in the world, but this market has declined since the early 1980s. In 1982, an estimated 10.5 million people in the United States had used cocaine in the previous year.[15] In 2008, the figure was 5.3 million, about half as many. This long-term decline occurred despite falling prices and can be attributed to a number of causes, including increased prevention, treatment (complemented by the establishment of 'drug courts') and 'social learning.' Crack cocaine became a stigmatized drug in the second half of the 1980s, and powder cocaine also became less fashionable.

This long-term demand-driven decline appears to have been complemented by a recent, more dramatic, supply-driven one. The annual prevalence rate of cocaine use in the United States fell from 3% of the adult population in 2006 to 2.6% in 2008.[16] Recent declines have also been reported in Canada, with adult annual use rates falling from 2.3% in 2004 to 1.9% in 2008.[17] Household surveys in Mexico showed an increase after 2002. However, results from a survey in Mexico City in 2006 suggest that cocaine use may have actually declined between 2006 and 2008, following a strong increase between 2002 and 2006.[18]

14 Unweighted results are shown as for a number of developing countries data from only a few hospitals or drug treatment centers is available. Nonetheless, for most regions, changes in the proportion of treatment demand for cocaine seem to reflect rather well underlying actual trends in the relative importance of cocaine in total drug-related treatment demand. The only exception is Africa. The alleged 'decline' in the proportion of cocaine-related treatment demand for Africa between 2004 and 2008 is a statistical artifact. For this year's *World Drug Report* all estimates older than 10 years were removed. This did not impact much on most regions, except Africa. It reduced significantly the number of country estimates available for Africa. The 'decline' for Africa is thus basically due to a different and very small sample of reporting African countries, but not to any actual decline of cocaine-related treatment demand there. On the contrary, in the limited number of African countries where comparable data are available, the proportion of cocaine in total treatment demand appear to have increased.

15 US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA), *1995 National Household Survey on Drug Abuse, Report #18,* Rockville, Maryland, 1996.

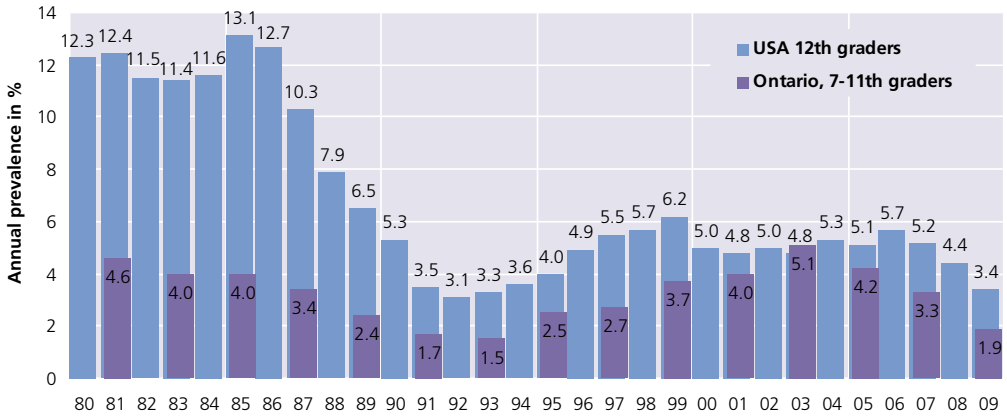
16 SAMHSA, *Results from the 2008 National Survey on Drug Use and Health.* The data were re-adjusted to the internationally comparable age group 15-64.

17 Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008*, Ottawa 2009. The decline from 1.9% of the population age 15 and above in 2004 to 1.6% in 2008 is equivalent to a decline from 2.3% to 2.0% if the numbers are re-adjusted to the internationally comparable age group of those aged 15-64.

18 Massive increases, followed by a decline seems to be indirectly also confirmed by general population household surveys conducted in Mexico in 2002 and 2008. While lifetime prevalence of cocaine use doubled, from 1.23% in 2002 to 2.4% in 2008, annual prevalence rose by 'just' 25% from 0.35% in 2002 to 0.44% in 2008.In other words, lifetime prevalence rose by almost 1.2 percentage points while annual prevalence rose by 'just' 0.1 percentage points. Such results would be only possible if large sections of society started experimenting with cocaine but gave it up again at some point between 2003

Fig. 30: Annual prevalence of cocaine use among high school students in the United States and Ontario (Canada), 1980-2009

Sources: NIDA, *Monitoring the Future;* OSDUH, *Drug Use Among Ontario Students, 1977-2009*



The same recent and dramatic decline can be seen in school surveys in the United States and Canada, where student use has almost halved in three years.[19] In 2009, the perceived availability of cocaine among US students reached its lowest level since 1978. A strong reduction in availability is also confirmed by US law enforcement. Despite ongoing efforts to fight the drug trade, US cocaine seizures along the border with Mexico fell by 40% between 2006 and 2008 and remained at the lower level in 2009, while heroin, marijuana and methamphetamine seizures all increased.[20]

The strong drop in cocaine use is also reflected in forensic data. Cocaine positive hair tests among the US workforce, reflecting use over the past three months, showed a 40% drop in just two years, from 5.3% in 2007 to 3.2% over the first two quarters of 2009.[21] The share of the US workforce that tested positive for cocaine, as detected by urine analysis (reflecting use over the last two to three days), showed a 58% decline between 2006 (0.72%) and the first two quarters of 2009 (0.3%).

and 2007. This in turn would suggest that the annual prevalence of cocaine use was already higher at some point between 2003 and 2007, with a peak probably around 2006, followed by a decline in the most recent years. Alternatively, more than 50% of all annual cocaine users would have had to give up their habit every year between 2002 and 2007, which is not very likely. Moreover, the proportion of cocaine in total drug treatment demand declined in recent years, from 37.1% in 2006 to 33.9% (UNODC ARQ).

19 The reduction was 40% between 2006 and 2009 in the USA and 50% in Ontario, which accounts for more than a third of Canada's total population.

20 National Drug Intelligence Center, *National Drug Threat Assessment 2010*, Johnstown, February 2010.

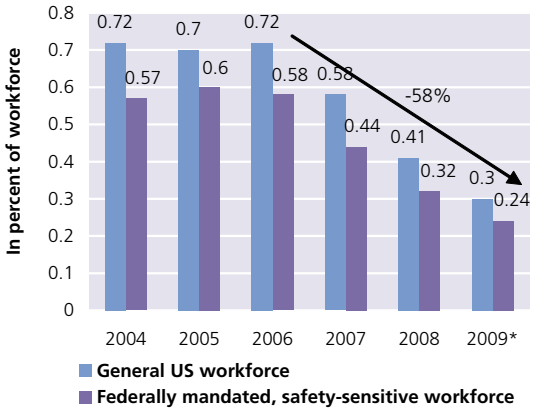
21 Quest Diagnostics, *New Hair Data Validate Sharp Downward Trend in Cocaine and Methamphetamine Positivity in General U.S. Workforce* Madison, N.J, 20 November 2009 and The Medical News, *Quest Diagnostics reports sharp downward trends in cocaine and methamphetamine use*, 20 November 2009.

While the forensic tests are not administered to a representative sample of the US population, some 6 million people undergo these tests, almost 100 times as many as those interviewed in household surveys (69,000 in 2008).[22]

Fig. 31: Positive tests for cocaine use among the US workforce, 2004-2009*

* Positive tests for cocaine use among the general US workforce (5.7 million tests in 2008) and among the federally mandated, safety-sensitive workforce (1.6 million tests in 2008). Data for 2009 refer to the first two quarters only.

Source: Quest Diagnostics, *Drug Testing Index*

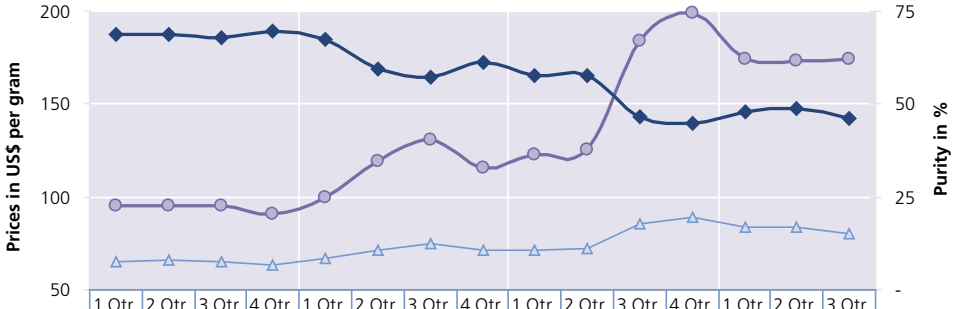


The recent decline (since 2006) appears to have been mainly supply-driven, caused by a severe cocaine shortage. This shortage is also reflected in rapidly falling purity levels and a consequent rise in the cost per unit of pure cocaine. While street prices remained fairly

22 SAMHSA, *Results from the 2008 National Survey on Drug Use and Health.*

Fig. 32: Average of all cocaine purchase prices in the United States, January 2006-September 2009

Source: US Drug Enforcement Agency



	2006				2007				2008				2009		
	1 Qtr	2 Qtr	3 Qtr	4 Qtr	1 Qtr	2 Qtr	3 Qtr	4 Qtr	1 Qtr	2 Qtr	3 Qtr	4 Qtr	1 Qtr	2 Qtr	3 Qtr
Purity adjusted prices	95.1	95.4	95.1	90.6	99.5	119.4	130.9	115.7	123.2	125.1	184.3	199.5	174.4	173.2	174.0
Unadjusted prices	65.2	65.7	64.8	63.2	67.0	70.9	74.8	70.9	71.1	71.9	85.7	89.2	83.9	84.2	80.4
Purity (in %)	68.6	68.9	68.1	69.8	67.4	59.4	57.2	61.3	57.7	57.5	46.5	44.7	48.1	48.6	46.2

stable throughout this period, purity dropped dramatically, resulting in an effective doubling of the real price of cocaine between 2006 and 2009.

There are several reasons for this shortage. Interdiction has stiffened in Colombia, Central America and Mexico. Cartel violence in Mexico has also disrupted supply routes. Perhaps most importantly, production has declined in Colombia, the primary source of cocaine for the United States market, and production in Peru and the Plurinational State of Bolivia continue to be directed towards Europe and the Southern Cone. The fact that the US market is almost exclusively supplied by Colombian cocaine (rather than Peruvian or Bolivian) has been established scientifically. Forensic analyses of cocaine seized or purchased in the United States have repeatedly shown that nearly 90% of the samples originate in Colombia.[23]

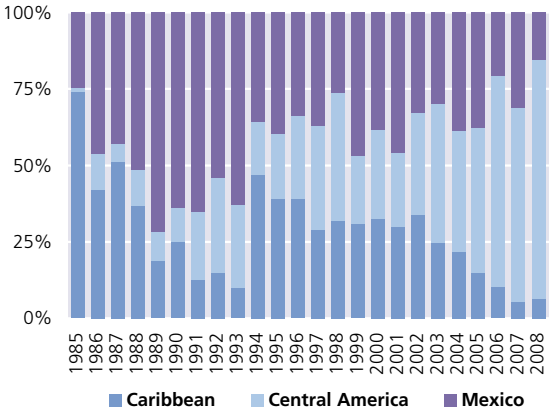
Cocaine is typically transported from Colombia to Mexico or Central America by sea (usually by Colombian traffickers), and then onwards by land to the United States and Canada (usually by Mexican traffickers). The US authorities estimate that close to 90% of the cocaine entering the country crosses the US/Mexico land border, most of it entering the state of Texas and, to a lesser extent, California and Arizona, through the relative importance of Arizona seems to be increasing. According to US estimates, some 70% of the cocaine leaves Colombia via the Pacific, 20% via the Atlantic and 10% via the Bolivarian Republic of Venezuela and the Caribbean.[24] The routes have changed over the years.

23 US State Department, Bureau for International Narcotics and Law Enforcement Affairs, *International Narcotics Strategy Report*, Vol. I, March 2009.

24 National Drug Intelligence Center, *National Drug Threat Assessment 2009*, December 2008.

Fig. 33: Distribution of cocaine seizures in Central America, the Caribbean and Mexico, 1985-2008

Source: UNODC ARQ/DELTA

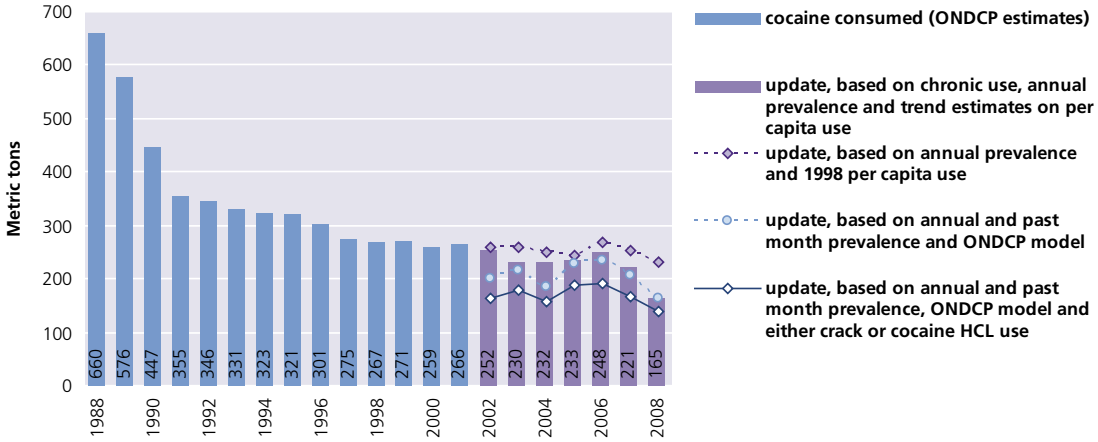


Direct cocaine shipments from Colombia to Mexico have been moved by a wide variety of marine craft, recently including self-propelled semi-submersibles, often transporting several tons of cocaine (typically between 2 and 9 mt). In 2008, 29.5 mt of cocaine were seized by the Colombian navy on board semi-submersibles in the Pacific Ocean, equivalent to 46% of all seizures made at sea by the Colombian authorities in the Pacific (64.5 mt). A few semi-submersibles have been detected on the Atlantic side as well. The Colombian Government reported seizing 198 mt of cocaine in 2008; 58% in the Pacific region and 31% in the Atlantic region.[25]

25 UNODC and Government of Colombia, *Colombia Coca Cultivation Survey*, Bogota, June 2009.

Fig. 34: Estimates of cocaine consumption in the United States, 1988-2008

Sources: Multiple sources[26]



In addition, the Bolivarian Republic of Venezuela has emerged as a prominent trans-shipment location for cocaine destined for Europe and the United States, according to Colombian, US and European sources, reflected, inter alia, in strong increases of Colombian overland cocaine shipments to the Bolivarian Republic of Venezuela. Cocaine transiting the Bolivarian Republic of Venezuela en route to the USA frequently departs by air from locations close to the border with Colombia for destinations in the Dominican Republic, Honduras and other Caribbean and Central American countries, as well as Mexico.[27]

Moreover, the importance of the Central American countries as trans-shipment locations has increased in recent years. Most of this cocaine is destined for Mexico and the United States, though some is also locally trafficked.

Routes and volumes

Calculating the amount of an illicit drug consumed in a country is complicated, even in a country as rich in data as the United States. In 2001, the US Government estimated that national cocaine consumption had declined from 660 mt in 1988 to 259 mt in 2000.[28] If these calculations were extended based on more recent annual prevalence data, the figure would be 231 mt for 2008.

This simple extension, however, may not capture the strong decline in recent years. A simplified model, recently proposed by the US Government,[29] results in a consumption range of 140 to 164 mt in 2008.[30] A third method, suggested by a think tank, would put the figure at less than 175 mt.[31]

26 For data 1988-2000: ONDCP, *What America's Users Spend on Illegal Drugs,* December 2001; for 2001 data: Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; for 2002-2008: UNODC estimates based on SAMHSA, *2008 National Survey on Drug Use and Health,* Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports* (2002-2008); ONDCP, *Arrestee Drug Abuse Monitoring Program - ADAM II 2008 Annual Report,* Washington D.C, April 2009; ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper).

27 US Department of State, *2010 International Narcotics Control Strategy Report*, March 2010.

28 The last comprehensive attempt to measure the size the US cocaine market entitled *What America's Users Spend on Illegal Drugs* was published by the Office of National Drug Control Policy (ONDCP) in 2001. The report estimated the number of chronic and occasional cocaine users, and multiplied these numbers with a per capita expenditure estimate, derived from interviews with arrested persons who had used drugs. Based on these dollar amounts, the actual amounts consumed could be calculated.

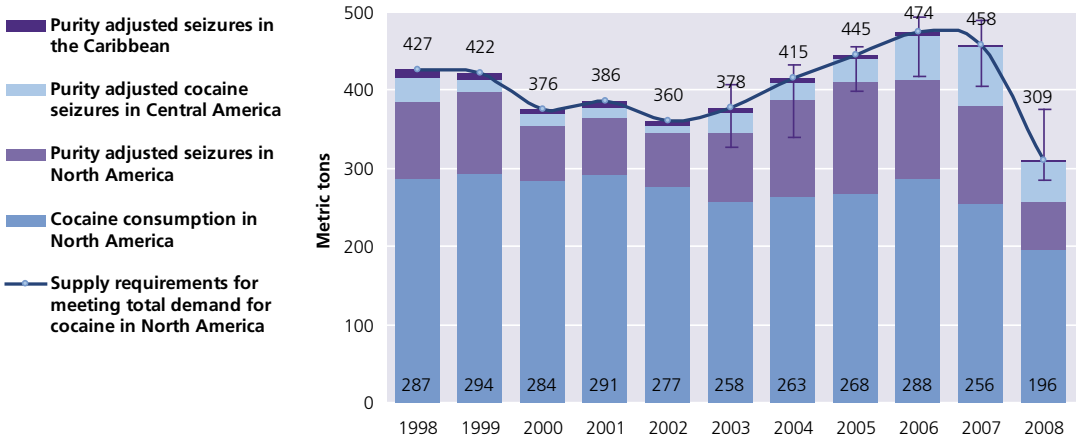
29 The simplified ONDCP model assumes that 20% of the monthly cocaine users consume 0.5 grams of cocaine per day while the remaining 80% consume 0.5 grams per week. This gives an average consumption of 57.3 grams of cocaine per month. Non-monthly annual users are assumed to consume 4 grams of cocaine per year. In the case of crack-cocaine it is assumed that 30% of the monthly users consume 0.75 grams per day and the remaining 70% consume 0.75 grams per week. This gives, on average, 109.4 grams of crack-cocaine per year for monthly users. The annual excluding monthly users are assumed to consume 6 grams of crack-cocaine per year. (ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008, internal paper). Adding cocaine HCL and crack-cocaine consumption estimates, the model results in overall per capita consumption of 31 grams of cocaine per user in the USA in 2008.

30 The problem here is that the US household survey provides estimates on overall cocaine use (that is, cocaine HCl and crack-cocaine) and then gives an estimate on the number of crack cocaine users. Assuming that no crack user in the US consumes cocaine HCl, the cocaine HCl users can be 'calculated' by subtracting crack cocaine users from all cocaine users; assuming that all crack-cocaine users also consume cocaine HCl, the cocaine HCl figure would be identical to the overall cocaine figure. Applying the first interpretation, cocaine use would have amounted to 140 tons in 2008; applying the second interpretation, cocaine use would have amounted to 164 tons in 2008.

31 Institute for Defense Analyses, *History of the US cocaine market (supply and consumption)*, presentation given to the UNODC expert group meeting: "The evidence base for drug control in Colombia: lessons learned", Bogota, 9-10 November 2009.

Fig. 35: Cocaine demand (consumption and seizures), North America, 1998-2008

Sources: Multiple sources[32]



There is a fourth method which makes use of new data to reclassify the users and calculate the amount of cocaine a user consumes in a year.[33] Applying these figures to the 2001 model suggests a total US consumption of 165 mt in 2008.[34] The four methods show a range of 140 to 231 mt, with the final method (165 mt) falling within this range of values.

32 ONDCP, *What America's Users Spend on Illegal Drugs*, December 2001; Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; SAMHSA, *National Survey on Drug Use and Health*, Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports (2002-2008)*; ONDCP, *Arrestee Drug Abuse Monitoring Program - ADAM II 2008 Annual Report*, Washington D.C, April 2009; ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper); Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008* and previous years; CINADIC, *Encuesta Nacional de Adicciones 2002*, Ciudad Mexico, Secretaria de Desarrollo, *Encuesta de Hogares, 2006*; CONADIC and Instituto Nacional de Salud Pública, *Encuesta Nacional de Adicciones, 2008*, UNODC ARQ/DELTA.

33 For example, new data are available on the number of cocaine-dependent people and heavy cocaine users (using cocaine more than 100 days a year) identified in the National Household Survey on Drug Use and Health (NHSDU). There are also new data on cocaine-positive tests among arrestees, provided in the Arrestee Drug Abuse Monitoring Program (ADAM II). See ONDCP, Arrestee Drug Abuse Monitoring Program, *ADAM II 2008 Annual Report*, Washington D.C., April 2009. This allows an updated definition and estimate of 'chronic use.'

34 The 31 grams of pure cocaine figure is the result of a multiplication of the number of chronic users (2.3 million) with a per capita use of 55 grams per year and a multiplication of the number of occasional users (3 million) with 14 grams per year, This yields a total at 165 tons for 5.3 million users, which gives 31 grams per user in 2008, down from 44 grams per user in 1998 and 66 grams per user in 1988. The per capita use figures were derived from the results of the ONDCP study *What America's Users Spend on Illegal Drugs*, published in 2001. They found average per capita consumption for chronic users to have fallen from 141 grams in 1988 to 106 grams in 1990 and 78 grams in 1998. The model used assumed that the downward trend continued as availability of treatment facilities continued to improve (67 grams in 2007). The downward trend was assumed to have accelerated in 2008, as a result of falling purity levels (55 grams). The decline in per capita consumption for occasional users was less pronounced, from 16 grams in 1988 to 15 grams in 1998, and was thus assumed to have fallen only slightly, to 14 grams in 2008.

The simplified method proposed by the United States can also be applied to the survey data available from Canada and Mexico, producing estimates of around 17 mt of cocaine for Mexico and 14 mt for Canada in 2008. Adding this to US consumption results in a total North American cocaine consumption of some 196 mt for the year 2008.

How much cocaine must be produced to satisfy this demand? Seizures along this route are substantial, although these shipments are not pure cocaine. In order to get 196 mt to the consumer, it appears that around 309 mt of cocaine was dispatched from the Andean region destined for North America in 2008. This would represent about half of all the cocaine that leaves these countries, down from around 60% in 1998.

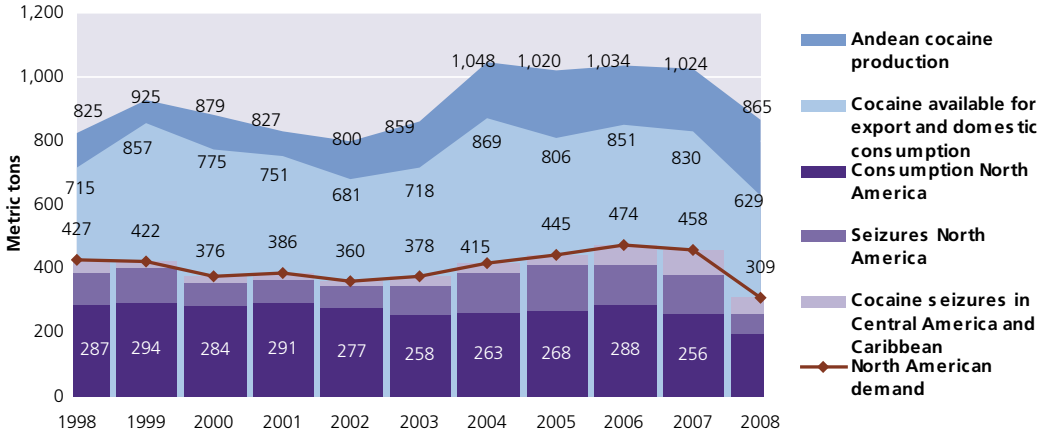
How much is this worth, and who derives the most money out of the supply chain? Calculating the retail value of the US market is a matter of applying the estimated volume consumed to the price data and adjusting for purity. The 2001 US Government calculations, adjusted to constant 2008 US dollars, show a decline of the US cocaine market from almost US$134 billion in 1988 to US$44 billion in 1998. Applying the new figures, it appears this value has fallen further still, to around US$35 billion by 2008.

In other words, the retail value of the US cocaine market declined by about two thirds in the 1990s, and by about another quarter in the last decade. The reason the value did not drop even further in the last 10 years is that the real price (adjusted for purity) has gone up.[35]

35 The calculations were based on the available price data series, provided by ONDCP, ending for the year 2007. For 2008, the purity-adjusted cocaine prices per gram, as reported by the DEA, were used. However, a comparison shows that the two price data series – though both based on STRIDE data – do not correspond, neither in absolute

Fig. 36: Cocaine production and demand for cocaine, North America, 1998-2008

Sources: Multiple sources[36]



Applying similar methods, the 2008 value of the Canadian cocaine market can be estimated at around US$2.4 billion. The domestic Mexican cocaine market is worth much less, due to far lower cocaine prices: around US$300 million in 2008. Adding these values, it appears that the North American cocaine market has declined in value from US$47 billion in 1998 to US$38 billion in 2008. Between 2006 and 2008, the value of the market remained basically stable.

Using price data and volumes for the various points in the trafficking chain, the value accruing to the various market players can be estimated. One study, analysing data from the late 1990s, suggested that there are typically seven layers of actors between a coca farmer in the Andean countries and the final consumer in the USA:[37]

1. The farmer sells the coca leaf (or his self-produced coca paste) to a cocaine base laboratory, operated by the farmers themselves or by various criminal trafficking groups. Sometimes these labs have the capacity to refine the drug further into cocaine hydrochloride.
2. The cocaine base (or the cocaine hydrochloride) is sold to a local trafficking organization which transports and sells the cocaine to a transnational drug trafficking organization.
3. The drug trafficking organization contracts yet another group to do the actual shipping.
4. The cocaine is shipped to traffickers in Mexico.
5. The Mexican traffickers transport the drugs across the US border to wholesalers.
6. The wholesalers sell the cocaine to local mid-level dealers or street dealers across the USA.
7. The street dealers sell the cocaine to the consumer.

The coca farmers in the three Andean countries earned about US$1.1 billion in 2008, down from US$1.5 billion in 2007.[38] Since about half of the exports go to North America, about half the farmer's income is ultimately derived from the North American market. But the share of the value of that market which goes to the

values nor in trends. While the ONDCP price data are supposed to reflect exclusively the retail level, based on the analysis of purity-adjusted prices for purchases of 2 grams or less, the DEA price data series is based on the average price for all cocaine purchases, purity-adjusted and recalculated to represent the average price of cocaine per gram. Though differences in methodology can explain differences in the level, they do not really explain differences in trends. In fact, the bulk of the DEA prices concerns the retail level and the DEA prices should thus – primarily – reflect changes in these prices as well. The differences in the two data sources is not only of academic interest. If the growth rates in prices, as revealed in the DEA data, were applied to the ONDCP price data set, starting as of 2007, the calculations suggest that the overall cocaine market would have slightly increased, from US$33.5 bn in 2006 to US$35 bn in 2008, as the strong increases in prices would have more than compensated for the declines in consumption. Given the large number of reports suggesting that strong price increases took place over the 2006-2008 period, the latter estimates appear to have a higher level of credibility.

36 UNODC, *2009 World Drug Report*, Vienna 2009; UNODC ARQ/DELTA; ONDCP, *What America's Users Spend on Illegal Drugs, December 2001;* Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; SAMHSA, *National Survey on Drug Use and Health,* Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports* (2002-2008) and ONDCP, Arrestee Drug Abuse Monitoring Program - *ADAM II 2008 Annual Report,* Washington D.C, April 2009 and ONDCP, *Cocaine Consumption Estimates Methodology,* September 2008 (internal paper), Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008* and previous years, CINADIC, *Encuesta Nacional de Adicciones 2002*, Ciudad Mexico, Secretaria de Desarrollo, *Encuesta de Hogares, 2006,* CONADIC and Instituto Nacional de Salud Pública, *Encuesta Nacional de Adicciones, 2008.*

37 R. Anthony and A. Fries, "Empirical modelling of narcotics trafficking from farm gate to street", in UNODC, *Bulletin on Narcotics*, Vol. LVI. Nos. 1 and 2, 2004, Illicit Drug Markets, pp. 1-48.

38 UNODC, *2009 World Drug Report*, Vienna 2009.

Fig. 37: Value of the US cocaine market, 1988-2008, in constant 2008 US$

Sources: Multiple sources[39]

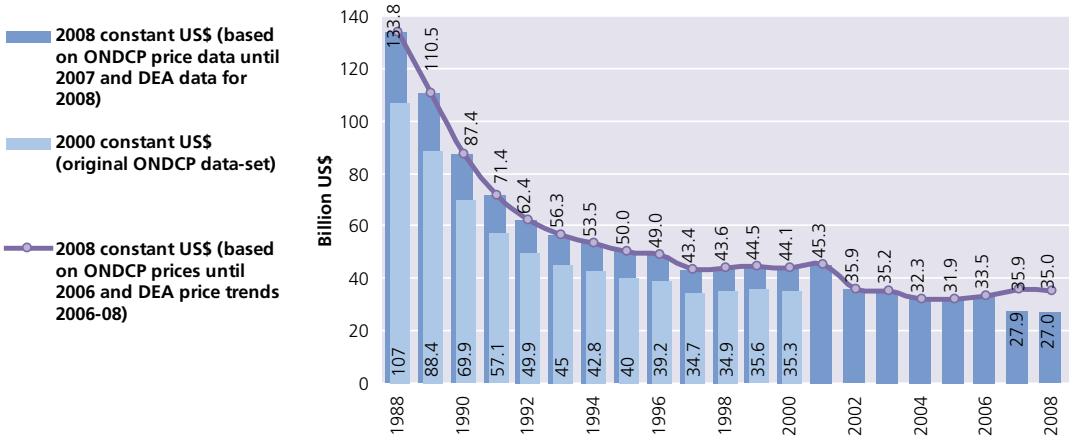
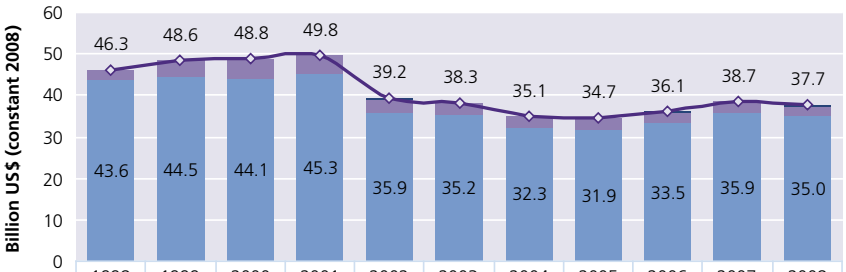


Fig. 38: Value of the North American cocaine market in constant 2008 US$, 1998-2008

Source: Multiple sources[40]



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Mexico	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3
Canada	2.5	4.0	4.6	4.4	3.2	2.9	2.7	2.5	2.3	2.4	2.4
USA	43.6	44.5	44.1	45.3	35.9	35.2	32.3	31.9	33.5	35.9	35.0
North America	46.3	48.6	48.8	49.8	39.2	38.3	35.1	34.7	36.1	38.7	37.7

farmer is only about 1.5%. The other 98.5% goes to those who transport and deal the drug.

The farmer's output is processed further and transported within the country to its point of embarkation. Those who take on these tasks earned around US$400 million from North American-bound shipments in 2008, or about 1% of the retail sales value.

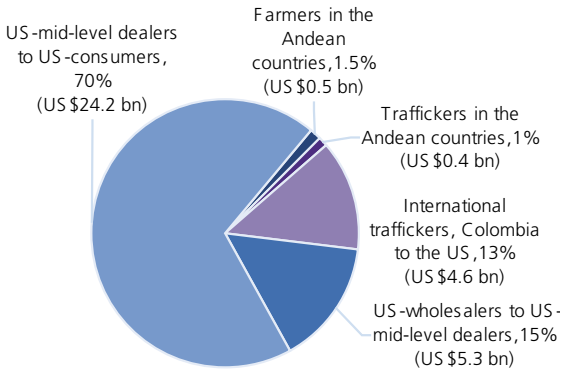
Out of 309 mt of cocaine that left the Andean region towards North America in 2008, some 208 mt arrived in the hands of the Mexican cartels. Most of the rest was seized. Trafficking from Colombia to Mexico was still largely in the hands of Colombian groups in 2008, though more recently Mexican groups have also started

39 For data 1988-2000: ONDCP, *What America's Users Spend on Illegal Drugs, December 2001;* for 2001 data: Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; SAMHSA, *National Survey on Drug Use and Health,* Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports* (2002-2008) and ONDCP, Arrestee Drug Abuse Monitoring Program - *ADAM II 2008 Annual Report,* Washington D.C, April 2009; ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report prepared by the Institute for Defense Analyses for ONDCP, Washington, July 2008; US Drug Enforcement Agency, based on STRIDE data.

40 For data before 2000: ONDCP, What America's Users Spend on Illegal Drugs, December 2001; for 2001 data: Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; SAMHSA, *National Survey on Drug Use and Health*, Rockville MD 2009, and previous years; FBI, Uniform Crime Reports (2002-2008) and ONDCP, Arrestee Drug Abuse Monitoring Program - *ADAM II 2008 Annual Report*, Washington D.C, April 2009; ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report prepared by the Institute for Defense Analyses for ONDCP, Washington, July 2008; US Drug Enforcement Agency, based on STRIDE data, quoted in DEA Intelligence Division, "Cocaine Shortages in U.S. Markets, November 2009" and US Bureau of Labor Statistics, Consumer Price Index (CPI); UNODC ARQ.

Fig. 39: Distribution of gross profits (in %) of the US$ 35 billion US cocaine market, 2008

Source: Original calculations based on UNODC ARQ and Government reports



to enter this line of business. At a wholesale price of US$12,500 per kg (US$15,625 per kg if purity adjusted), the imported cocaine in Mexico was worth some US$3.3 billion in 2008. With a purchase price of just under 1 billion dollars in Colombia, the total gross profits[41] accruing to those exporting the cocaine to Mexico can be estimated at around US$2.4 billion.

Shipments from Mexico into the United States are primarily undertaken by Mexican drug cartels. Taking domestic consumption, seizures and purity into account, Mexican cartels moved some 191 mt of pure cocaine across the border to the United States in 2008, valued at US$3 billion in Mexico. If all of this had been sold to wholesalers in the United States, it would have been worth US$6.4 billion. Border seizures reduced this value to US$5.8 billion. Deducting purchase costs, a gross profit of US$2.9 billion was generated by moving the cocaine across the border into the United States. Most of these profits were reaped by the Mexican drug cartels.

The largest profits, however, are made within the United States. The difference between the wholesale purchase price and the retail value of cocaine in the US was US$29.5 billion in 2008. Out of these gross profits, the bulk is generated between the mid-level dealers and the consumers, generating more than US$24 billion in gross profits, equivalent to 70% of total US cocaine sales. Some Mexican groups - as well as Dominican and Cuban groups - are tapping into this highly lucrative market, but most appears to go to a large number of small domestic US groups.

These figures show that US dealers as a whole make the most out of the market, but there are a lot of US dealers, so individual earnings may remain relatively small. Estimates of the number of persons involved in cocaine trafficking in the 1990s suggested that there were some 200 cocaine wholesalers in the United States, but some 6,000 mid-level cocaine dealers.[42] Beneath them, there are countless street-level dealers, many of whom are users themselves. Comparable figures are not available for the number of international traffickers, but it seems likely that, as individuals, they make more money than the thousands of dealers in the United States.

How does the market operate?

Following the dismantling of the Medellin and Cali cartels in the early 1990s, the Colombian organized crime groups got smaller, and market competition increased, pushing prices down. After the Colombian Congress amended the Constitution in 1997 to allow the extradition of citizens,[43] Colombian groups were largely relegated to the front end of the market chain. Better controls, first for direct flights from Colombia to the United States (starting in the 1980s), and later improved control over shipping in the Caribbean (in the 1990s), reduced the ability of the Colombian organized crime groups to traffic cocaine directly to the United States. By 2008, Mexican organized crime groups were found in 230 US cities (up from 100 cities three years earlier) while Colombian groups controlled illicit cocaine and heroin distribution channels in only 40 cities, mostly in the north-east.

In addition, criminal groups from Caribbean countries are also involved in cocaine trafficking, notably groups with links to the Dominican Republic. Dominican groups have been identified in at least 54 US cities. They operate mainly in locations along the east coast, including Florida. In addition, US-based Cuban organized crime groups pose a threat, because of their affiliations to drug traffickers in Peru, the Bolivarian Republic of Venezuela and Colombia. They are said to operate distribution networks in at least 25 US cities.[44]

Only a quarter of those arrested for cocaine trafficking in the US are foreign, however. US citizens appear to have secured the most lucrative portion of the trafficking chain for themselves. Perhaps this is why, despite the importance of the US as a destination market, US citizens are rarely arrested for cocaine trafficking in the transit or production countries. Based on data from 31

41 Gross profits are defined here as the difference between the sales price of the drugs and the original purchase price.

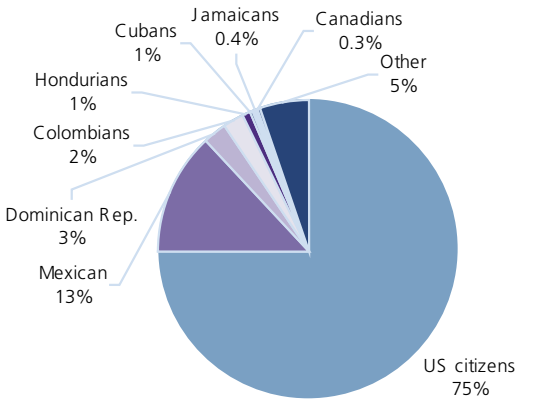
42 Institute for Defense Analyses, *History of the US Cocaine Market (Supply and Consumption)*, presentation given to the UNODC expert group meeting: "The evidence base for drug control in Colombia: lessons learned", Bogota, 9-10 November 2009.

43 Article 35, amended in the Colombian Constitution, A.L. No. 01, 1997.

44 National Drug Intelligence Center, *National Drug Threat Assessment 2009*, December 2008.

Fig. 40: Citizenship of federal cocaine arrestees in the USA in 2008

Source: UNODC ARQ



countries in the Americas, US citizens comprised only 0.2% of all cocaine trafficking arrestees over the 2001-2008 period. In 2008, the share was only 0.1%.

Impact of this flow

Large-scale cocaine imports into North America constitute, first of all, a serious health problem. This is reflected in high levels of dependence and strong treatment demand for cocaine across the Americas as well as in high levels of drug-related deaths linked to the abuse of cocaine. In most countries of the Americas, cocaine is the main problem drug, and thus the main drug for which treatment is required.

In the United States alone, almost 1 million people were dependent on cocaine in 2008 (see Box for the definition of 'dependence'). Of these, 660,000 people had to be treated for cocaine problems, according to US household survey data. This was twice as many people as for heroin or stimulants (around 340,000 each). One out of three people treated for drug problems in the United States in 2008 was treated for cocaine problems,[45] at a direct cost of around US$6 billion.[46]

45 SAMHSA, *Results from the 2008 National Survey on Drug Use and Health: National Findings,* 2009.

46 Treatment expenditure at the federal level amounted to US$3.3 bn or 24.5% of the federal US drug control budget in 2008. (ONDCP, *National Drug Control Strategy: FY 2010 Budget Summary*, Washington, May 2009). A previous ONDCP study put the overall health care costs (federal and state) at US15.7 bn in 2002 (ONDCP, *The Economic Costs of Drug Abuse in the United States*, December 2004), equivalent to US$18.9 bn expressed in 2008 US dollars. As the total number of persons treated remained largely unchanged between 2002 and 2008 (2.0 million persons treated in 2002, rising to 2.5 million in 2006 before falling to less than 2.1 million in 2008; SAMHSA, *Results from the 2008 National Survey on Drug Use and Health: National Findings,* Sept. 2009), total health care costs may have still been close to US$ 19 bn in 2008. As cocaine accounted for close to a third of all persons treated in 2008, cocaine-related treatment costs can be estimated to amount to some US$6 bn.

The DSM-IV definition of 'dependence'

The definition of 'dependence' in the US household survey is based on the definition found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). DSM-IV defines dependence as: a maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

- Tolerance, as defined by either of the following:

  - a need for markedly increased amounts of the substance to achieve intoxication or desired effect;

  - markedly diminished effect with continued use of the same amount of substance.

- Withdrawal, as manifested by either of the following:

  - the characteristic withdrawal syndrome for the substance;

  - the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms.

- Use of larger amounts or over a longer period than was intended.

- There is a persistent desire or unsuccessful efforts to cut down or control substance use.

- A great deal of time is spent in activities to obtain the substance, use the substance, or recover from its effects.

- Important social, occupational or recreational activities are given up or reduced because of substance use.

- The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (for example, continued drinking despite recognition that an ulcer was made worse by alcohol consumption).

Source: DSM-IV, Diagnostic and Statistical Manual of Mental Disorders, ed. 4. Washington DC: American Psychiatric Association (AMA), 1994.

Fig. 41: Drug related deaths – by drug category – across 40 US metropolitan areas, 2007

Source: SAMHSA, *Drug Abuse Warning Network, 2007: Area Profiles of Drug Related Mortality*, 2009

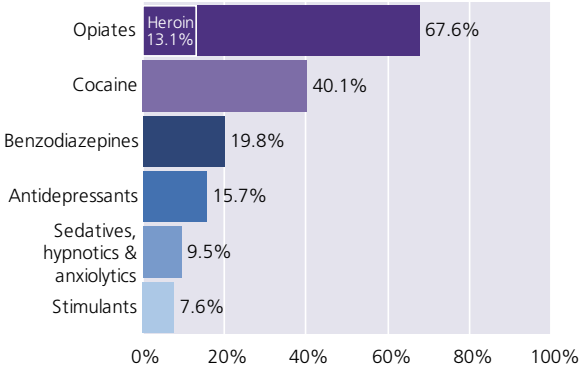
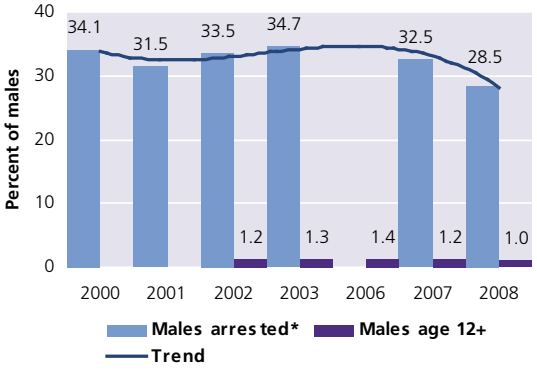


Fig. 42: Cocaine use among male arrestees in 10 US cities* and past month prevalence of cocaine use among males in the general US population, 2000-2008

* Unweighted average of results obtained from Atlanta, Charlotte, Chicago, Denver, Indianapolis, Minneapolis, New York, Portland, Sacramento and Washington DC.
Source: Office of National Drug Control Policy 2009



Cocaine also plays a significant role in drug-related deaths. Some 31,800 people died from drug-related causes in the United States in 2007, or about 10 per 100,000 citizens.[47] This is about twice the country's murder rate. The 7,475 fatal poisonings due to cocaine in 2006 are equivalent to 2.5 deaths per 100,000 inhabitants, or 20% of all drug-related deaths in the USA. Other studies suggest that the total proportion of 'cocaine-related' deaths (that is, deaths where cocaine was involved though not necessarily the only cause) is higher, at 40% of the total, equivalent to some 12,700 people in total in 2007.[48] The costs of these premature cocaine deaths can be estimated at some US$13 billion, expressed in 2008 US$.[49]

Cocaine use is more common among arrestees than the general population. The national drug use survey indicated that about 1% of US men used cocaine in the previous month in 2008, but urine tests of arrestees in 10 US cities found that 28.5% of the men in custody had recently used the drug. In Chicago, the figure was 44%. The corresponding rates in the 10 US cities for opiates (7.7%) and methamphetamine (5.9%) were much lower than for cocaine.[50] In line with the trends among the general population, however, cocaine use among arrestees has shown a clear decline in recent years.

Of course, the fact that suspected criminals use cocaine does not mean that cocaine causes their criminality. Both drug use and the likelihood of being arrested may be related to a third factor, such as social marginalization. But the same would be true for heroin or methamphetamine, where the connection with crime is much weaker. Studies have also shown a stronger correlation between levels of cocaine use in a city and violent crime than for other drugs. Cocaine users, especially crack users, can consume an almost unlimited amount of their chosen drug, unlike heroin or methamphetamine users. Crack highs are short-lived, prompting users to find money for more by any means possible, including prostitution and violent acquisitive crime. High sales volumes have also made crack an attractive funding source for street gangs, whose wars over sales turf have been a major source of murders in the United States in the past.

This is one reason that the general decline in murders in the United States over the last two decades or so has been attributed, at least in part, to declines in cocaine use. Other crime rates have also fallen in the same period. According to national surveys, the share of people who used cocaine in the previous month fell by 56% between 1988 and 2008. Between 1990 and 2008, the murder rate fell by 43%. During the same period, the US property crime rate fell by 29% and the violent crime rate by 34%.[51] There are also clear links between cocaine and violence in the production and transit countries.

47 *National Vital Statistics Reports, Deaths: Preliminary Data for 2007*, Vol. 58, No. 1, August 2009.

48 Ibid.

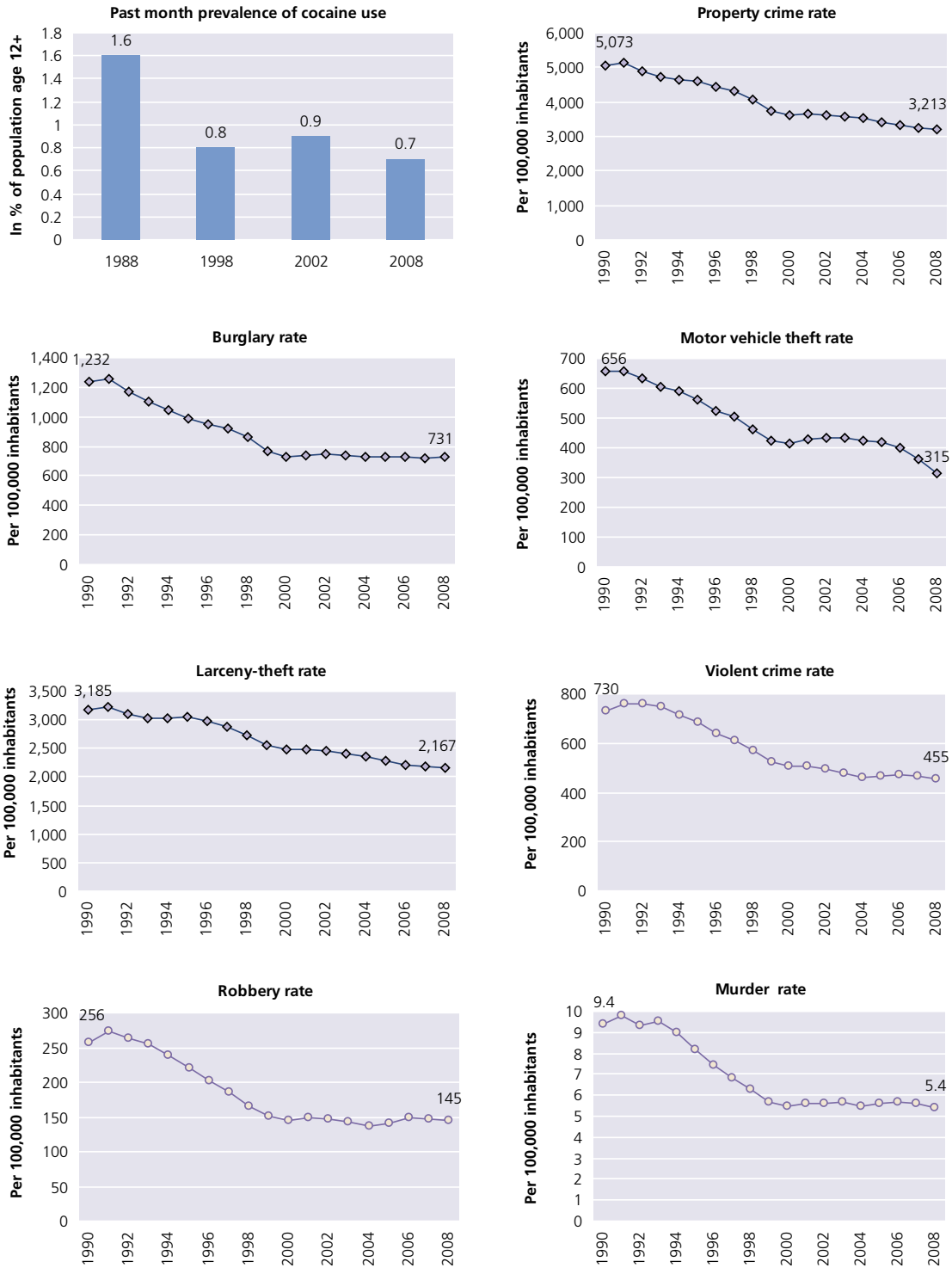
49 The overall costs related to premature deaths due to drug abuse for US society were estimated by ONDCP at US$ 24.6 bn for the year 2002 (ONDCP, *The Economic Costs of Drug Abuse in the United States, 1992-2002*, Washington, November 2004), equivalent to US$ 27 bn in 2008 US dollars. As the number of drug-related premature deaths actually increased by 22% between 2002 and 2007, this figure would come close to US$33 bn, expressed in 2008 US dollars. Applying a ratio of 40% to this value (share of cocaine in all deaths in 2007), results in an estimate for cocaine-related premature death of around US$13 bn.

50 ONDCP, *Arrestee Drug Abuse Monitoring Program - ADAM II, 2008 Annual Report*, April 2009.

51 US Department of Justice, Federal Bureau of Investigation (FBI), Crime in the United States, Preliminary Semiannual Uniform Crime Report, January to June, December 2009.

Fig. 43: Long-term trends: Cocaine use and changes in the crime rates in the United States

Sources: SAMHSA, *2008 Household Survey on Drug Use and Health*; SAMHSA, *1998 National Household Survey on Drug Abuse*; FBI, *Uniform Crime Reports*

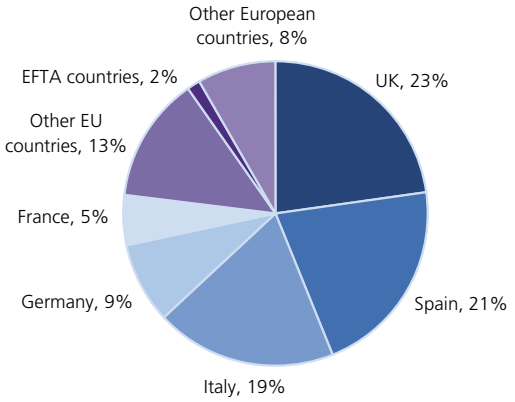


1.3.3 Cocaine from the Andean Region to Europe

The world's second largest flow of cocaine is directed towards Europe. The 27 countries of the European Union (EU) and the four countries of the European Free Trade Association (EFTA) host some 90% of Europe's 4.5 million cocaine users. The single largest cocaine market within Europe is the United Kingdom, followed by Spain, Italy, Germany and France.

Fig. 44: National shares of the cocaine user population in Europe in 2007/08

UNODC ARQ; Government reports; UNODC, *World Drug Report 2009*; EMCDDA, *Statistical Bulletin 2009*



In contrast to the shrinking cocaine market in North America, the number of cocaine users in the EU/EFTA countries has doubled over the last decade, from 2 million in 1998 to 4.1 million in 2007/2008. Recent data suggest, however, that the rapid growth of the European cocaine market is beginning to level off. The annual cocaine prevalence rate in the EU/EFTA region (1.2% of the population aged 15-64) is still far lower than in North America (2.1%), though individual countries, notably Spain (3.1% in 2007/2008) and the United Kingdom (3.7% in Scotland; 3.0% in England and Wales in 2008/2009), already have higher annual prevalence rates than the United States (2.6% in 2008).

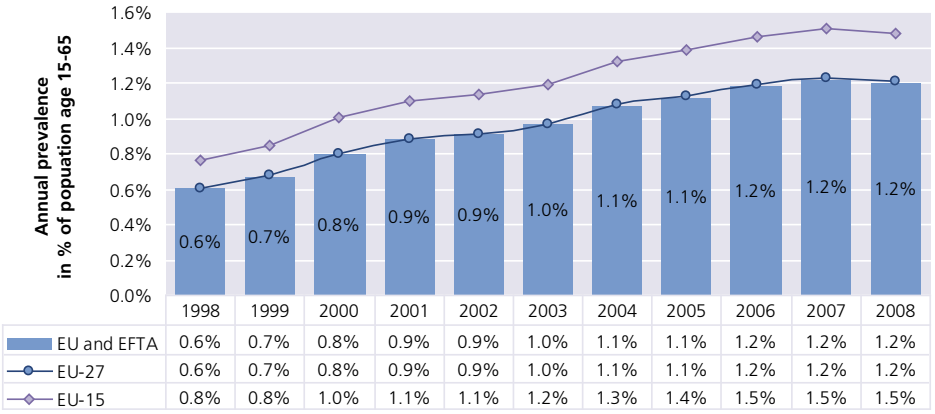
Routes and volumes

Trafficking of cocaine to Europe is mainly by sea (often in container shipments), although deliveries by air and by postal services also occur. The World Customs Organization reported that 69% of the total volume of cocaine seized by customs authorities en route to West Europe was detected on board boats or vessels, concealed in freight or in the vessels' structure.[52] Though recent years have seen a proliferation of entry points, including some in the Balkan region, most of the cocaine entering Europe does so through one of two hubs: Spain and Portugal in the south, or Netherlands and Belgium in the north. The Iberian peninsula is close to Latin America both geographically and culturally, and the Low Countries host the largest ports in Europe. Between them, Spain, Portugal, the Netherlands and Belgium accounted for close to 70% of all cocaine seized in Europe in 2008, though just a quarter of the 'European cocaine' was consumed in these countries.[53]

Despite the growth of Peruvian and Bolivian production capacity, the main source of the cocaine found in Europe

Fig. 45: Annual prevalence of cocaine use in the EU and EFTA countries, 1998-2008

Sources: UNODC ARQ; Government reports; UNODC, *World Drug Report 2009*; EMCDDA, *Statistical Bulletin 2009*



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU and EFTA	0.6%	0.7%	0.8%	0.9%	0.9%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%
EU-27	0.6%	0.7%	0.8%	0.9%	0.9%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%
EU-15	0.8%	0.8%	1.0%	1.1%	1.1%	1.2%	1.3%	1.4%	1.5%	1.5%	1.5%

52 World Customs Organization, *Customs and Drugs Report 2008*, Brussels, June 2009.

53 EMCDDA/Europol, *Cocaine: A European Union perspective in the global context*, April 2010.

in still Colombia. Individual drug seizures reported by Spain suggest, for instance, that 81% of the cocaine originated in Colombia and its neighbouring countries (the Bolivarian Republic of Venezuela, Ecuador and Panama) in 2008. Nonetheless, shipments from Peru and the Plurinational State of Bolivia are more common for Europe than for the United States, and the relative importance of Colombia is declining. For 2002, the UK authorities reported that 90% of the cocaine seized there originated in Colombia; by 2008, the figure fell to 65%. For some of the smaller European markets, Peru and the Plurinational State of Bolivia seem to be the primary sources of cocaine already.There have also been changes in the routes. Shipments to Europe, particularly large maritime shipments, have been increasingly transiting the Bolivarian Republic of Venezuela in recent years.[54] In fact, for cocaine seized since 2004 where the origin could be determined, 41% have been traced back to the Bolivarian Republic of Venezuela.[55] According to the new Maritime Analysis Operation Centre (MAOC-N), more than half (51%) of all intercepted shipments in the Atlantic over the 2006-2008 period started their journey in the Bolivarian Republic of Venezuela. Direct shipments from Colombia accounted for just 5% of the total.[56]

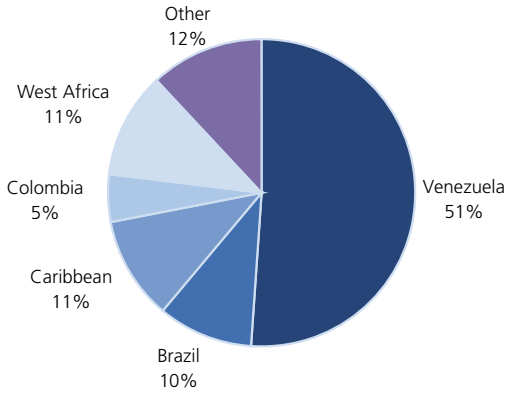
Sailing vessels, mostly travelling from the Caribbean to Europe, emerged in recent years as the most common source for seizures (43% of all seizure cases according to MAOC-N data), followed by freight vessels (39%) and other motor vessels (12%).[57] Semi-submersibles, in contrast, do not play any significant role for trafficking cocaine from South America to Europe. Only one has been sighted so far, in Galicia, northern Spain in 2006.[58]

There are also ongoing cocaine shipments by air from various South American countries (Brazil, Argentina, Uruguay et cetera), Caribbean countries (Netherlands Antilles, Dominican Republic, Jamaica et cetera) and Central American countries (including Costa Rica) to destinations in Europe.

In addition, shipments to Africa, mostly West Africa, gained in importance between 2004 and 2007, resulting in the emergence of two key trans-shipment hubs: one centered on Guinea-Bissau and Guinea, stretching to Cape Verde, Gambia and Senegal, and one centered in the Bight of Benin, which spans from Ghana to Nigeria. Colombian traffickers often transport the cocaine by 'mother ships' towards the West African coast before

Fig. 46: Departure locations of identified drug trafficking shipments by sea from South America to Europe, 2006-2008

Source: Maritime Analysis Operation Centre



offloading it to smaller vessels. Some of it proceeds onward by sea to Spain and Portugal while some is left as payment to West Africans for their assistance – as much as 30% of the shipment.[59] The West Africans then traffic this on their own behalf, often by commercial air couriers. Shipments are also sent in modified small aircraft from the Bolivarian Republic of Venezuela or Brazil to various West African destinations.[60] Increased awareness, interdiction and political turmoil in the northern hub seem to have reduced the traffic through this region in 2008 and 2009, although it could quickly re-emerge. The decline in trafficking, affecting in particular Lusophone Africa, may also be a reason why Portugal experienced a sharp fall in cocaine seizures between 2006 and 2008, following a massive upward trend over the 2003-2006 period.

European cocaine seizures as a whole increased strongly over the 1998-2006 period, from 32 to 121 mt, before declining again over the 2006-2008 period to some 63 mt. Nonetheless, overall cocaine seizures in 2008 were almost twice as high as in 1998.

The largest interceptions were reported by Spain, accounting for 45% of all European cocaine seizures in 2008 as well as over the 1998-2008 period. The Spanish figures reflect both the strong increase and the recent decline in cocaine seizures in Europe. The trends are also confirmed in survey data on perceived cocaine availability in Spain.[61]

54 Ibid.

55 UNODC, Individual Drug Seizures database.

56 Maritime Analysis Operation Centre (MAOC(N), *Statistical Analysis Report,* Lisbon 2009.

57 Ibid.

58 MAOC-N, *Semi-Submersible Briefing Paper*, Lisbon 2008.

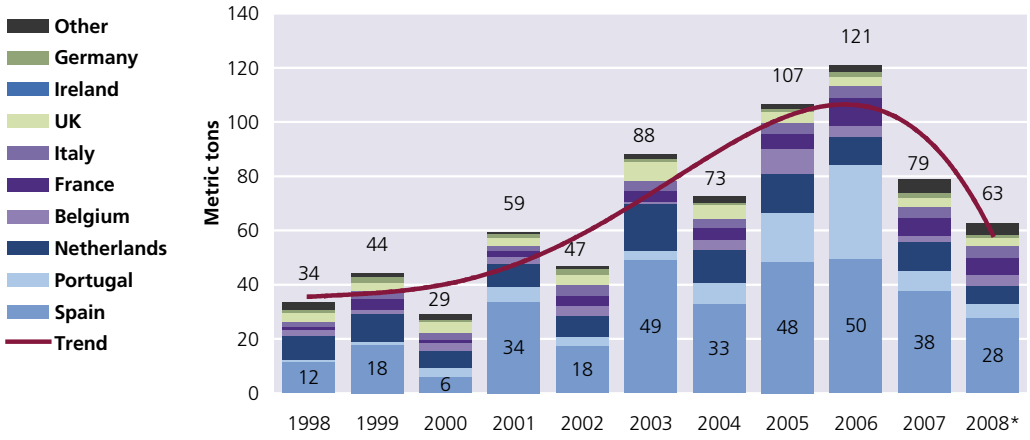
59 Serious Organized Crime Agency (SOCA), *The United Kingdom Threat Assessment of Organised Crime, 2009/10*, London, 2009.

60 UK Home Affairs Committee, The Cocaine Trade (see: http://www.publications.parliament.uk/pa/cm200910/cmselect/cmhaff/74/7410.htm); SOCA, *UK Threat Assessment of Organised Crime 2009/10.*

61 Ministerio de Sanidad y Consumo, *2008 National Report to the EMCDDA by the Reitox National Focal Point, 'Spain' New Development, Trends and in-depth information on selected issues*, Madrid,

Fig. 47: European cocaine seizures (mt; not adjusted for purity), 1998-2008

*No data for 2008 received for Poland, Scotland, Ukraine and Belarus – assumed unchanged levels of seizures.
Source: UNODC ARQ/DELTA



Spanish cocaine seizures primarily take place in international waters (two thirds of the total in 2007) and about one tenth are made from containers. A much smaller share is seized close to the country's beaches (2%), while airports account for just 6%.[62]

Portuguese seizures basically mirror the patterns seen in Spain, showing increases until 2006 and declines thereafter (from 34 mt in 2006 to 5 mt in 2008). The changes have been even more pronounced in Portugal, reflecting the strong links with trafficking via West Africa (via Guinea-Bissau and Cape Verde).

Dutch cocaine seizures have also sharply fallen in recent years. This is a result of the '100% control' policy in the Antilles and at Schiphol airport (Amsterdam), which reduced the number of drug couriers from the Caribbean and various South American countries,[63] improved container controls as well as growing efforts to stop shipments before they arrive in the Netherlands. For example, in 2008, the National Crime Squad arrested several men planning to ship 2.6 mt of cocaine from a warehouse in Sao Paulo, Brazil, to the Netherlands. Large amounts of cocaine continue to be seized by the coastguards of the Dutch Antilles and Aruba. Out of 6.8 mt seized in 2008, 4.2 mt were taken by the Dutch navy from a cargo vessel sailing under a Panamanian flag from the Bolivarian Republic of Venezuela to Europe. An additional factor may be diversions to the port of Antwerp (Belgium).

In 2008, for the first time, France seized more cocaine than any other European country besides Spain. Most of this cocaine (6 out of 8.2 mt) was seized at sea, mainly close to the French overseas territories in the Caribbean or close to the West African coast. Cocaine seizures that could be traced back to the West African countries themselves, however, amounted to just 0.3 mt in 2008. Most of the French-seized cocaine in 2008, came from Brazil (40% of the total) or the Bolivarian Republic of Venezuela (21% of total). Cocaine trafficked from Brazil most likely originated in Peru or the Plurinational State of Bolivia, reflecting the growing importance of these producers to Europe.[64]

As in the US market, estimating the volume of cocaine consumed in Europe is complicated. There are good survey data on the share of the population that uses cocaine, but less information on how much they use. The subsequent analysis is based on four different estimation methods,[65] resulting in average consumption

2008.

62 Ministerio del Interior, Secretaria de Estado de Seguaridad, Centro de Inteligencia contra el Crimen Organizado, *Hashish and Cocaine in Europe*, presentation given to UNODC, Vienna, July 2008.

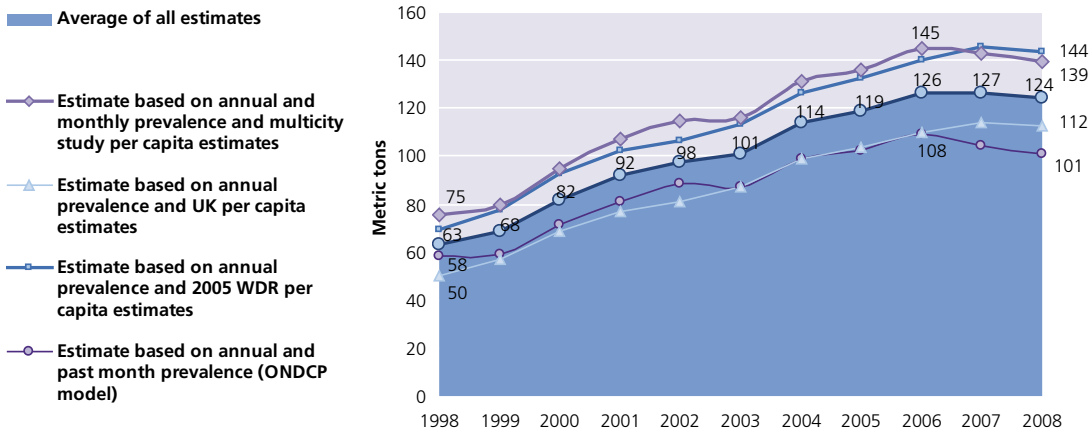
63 US Department of State, *International Narcotics Control Strategy Report*, March 2009.

64 Direction Générale de la Police Nationale, Direction Générale de la Police Judiciare, Office Central pour la Répression du Trafic Illicite des Stupéfiants (O.C.R.T.I.S.), *Usage et Trafic des Produits Stupéfiants en France en 2008*, Paris, 2009.

65 These techniques are detailed in the following documents: United States Office of National Drug Control Policy, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper); Home Office, *Sizing the UK market for illicit drugs,* London 2001; Home Office, *Measuring different aspects of problem drug use: methodological developments, Home Office Online Report 16/06*, London 2006; UNODC, *2005 World Drug Report, Volume 1: Analysis*, Vienna 2005; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*, Vienna 2009. While the first model, developed by ONDCP, seems reasonable, it is based on assumptions, not on actual empirical data from European countries. The second model is based on empirical data, but they refer to the situation in one country (UK) which is not necessarily representative for the rest of Europe. The third model refers to cocaine use in West and Central Europe, but it is again derived from a number of underlying assumptions (such as effectiveness of law enforcement interven-

Fig. 48: Amounts of (pure) cocaine consumed in the EU/EFTA countries, 1998-2008

Sources: Multiple sources[66]



rates of between 25 to 35 grams of pure cocaine per user. Multiplied by the number of users, this suggests consumption of some 101 to 144 mt for the EU and EFTA countries in 2008. The average is 124 mt, about double the figure a decade before.[67]

In line with the increases in the volumes of cocaine trafficked into Europe since the early 1990s, prices declined. Expressed in constant 2008 euros,[68] cocaine retail prices, at street purity, fell from an average of €143 in 1990 to €70 per gram in 2008, essentially halving in two decades. To understand the relative attractiveness of this market, however, it helps to look at these figures in constant 2008 US dollars.[69] Here, too, cocaine prices declined over the 1990-2000 period, but they increased over the 2000-2008 period, from US$88 to US$102, as the US dollar depreciated against the euro. The increase was most acute over the 2006-2008 period.

These euro price declines took place in the context of declining purity, however.[70] Taking purity into account, retail cocaine prices expressed in constant 2008 euros remained basically stable between 1998 and 2008: €183 per pure gram in 1998 and €189 per pure gram in 2008. The same was true of wholesale prices. Expressed in constant US dollars, the purity-adjusted price actually increased significantly. The euro, particularly the high-value 500 euro note, has become an important secondary currency for drug traffickers.

If the amounts of cocaine consumed are multiplied by

tions and importance of regional proximity). The fourth model is based on empirical data from six cities in Europe, but applying the use rate found among marginalized users to all past month users is likely to result in an over-estimate. At the same time, a basic problem of household surveys, based on self-reports, is that they are – most likely – showing a substantial under-estimate of the extent of drug use. It remains difficult to judge to what extent these errors offset each other in the final calculation of the amounts consumed.

66 UNODC ARQ; UNODC, *2009 World Drug Report*, Vienna 2009; EMCDDA, *Statistical Bulletin 2009*, Lisbon 2009; United Nations, Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 2008 Revision*, 2009; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*, Vienna 2009; ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper); Home Office, *Sizing the UK market for illicit drugs,* London 2001; Home Office, *Measuring different aspects of problem drug use: methodological developments*, Home Office Online Report 16/06, London 2006; UNODC, *2005 World Drug Report*, *Volume 1: Analysis*, Vienna 2005.

67 Available data suggest that the European cocaine market doubled in volume terms over the 1998-2006 period, before stabilizing over the 2006-08 period. The calculation is based on the assumption of largely stable per capita use levels. Given the lack of reliable quantitative or qualitative information, the calculations do not allow for the possibility that per capita use levels increased over the 1998-2006 period due to the progression from casual to problematic use, and that they may have fallen in terms of pure cocaine equivalents after 2006 as purity declined while use may have remained stable in terms of the amounts of street level cocaine consumed.

68 Current euro values were transformed into constant euros by applying the consumer price index for the euro zone.

69 Current US dollar values were transformed into constant US dollar values by applying the US consumer price index.

70 The unweighted averages of reported purities for countries in West and Central Europe show a decline at the retail level from 59% in 1998 (range: 25% - 75%) to 47% in 2005 and 36% in 2008 (range: 16% - 52%). At the wholesale level the decline was from 78% (range: 55% -90%) in 1998 to 55% in 2008 (range: 26% - 80%).

As some of the decline could have been simply the result of specific countries reporting in one year, and not in another, a modified calculation model was introduced. This model assumes that the results of non-reporting countries remained basically unchanged from the previous year (or a later year) for which data are available. This was done to avoid changes in the overall average due to the reporting or non-reporting of countries in specific years. Using this approach for missing data, changes in the overall average only reflect actual changes in country-specific purity data. Based on this model, the average cocaine purities at the retail level in West and Central Europe declined from 55% in 1998 to 43% in 2005 and 37% in 2008. The wholesale purities declined according to this model from 72% in 1998 to 60% in 2005 and 56% in 2008.

Fig. 49: Cocaine prices (not adjusted for purity) in West Europe* in constant currency units per gram, 1990-2008

* Average price of 18 West European countries (accounting for the bulk of cocaine consumption in Europe), weighted by population size.
Sources: UNODC, *World Drug Report 2009* (and previous years) and ARQ

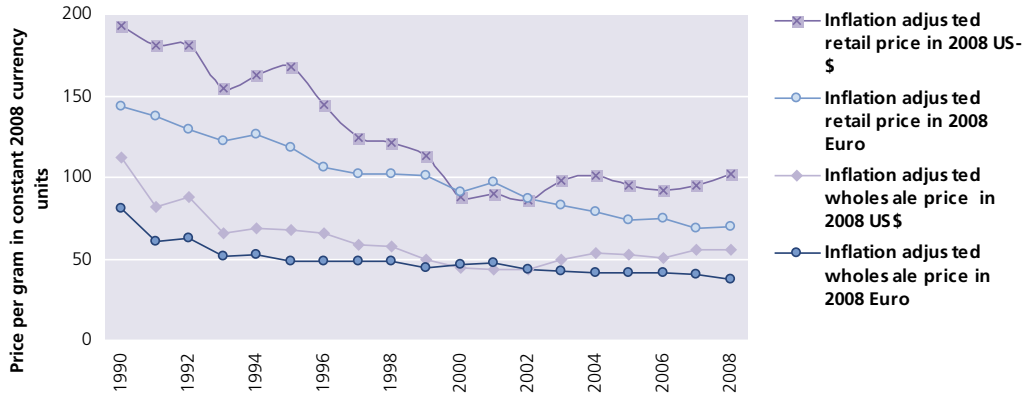
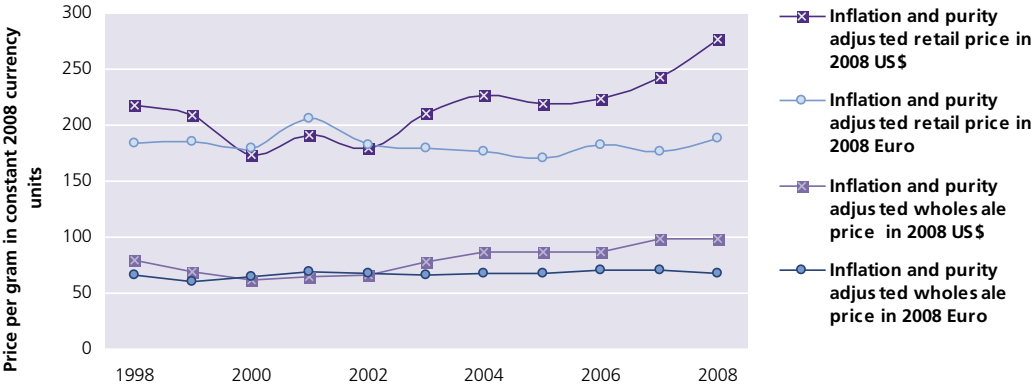


Fig. 50: Purity-adjusted cocaine prices in West Europe, in constant currency units, per gram, 1998-2008

Sources: UNODC, *World Drug Report 2009* (and previous years) and ARQ



the purity-adjusted retail prices, it appears that the value of the European cocaine market has more than doubled in the last decade (from US$14 billion in 1998 to US$34 billion in 2008). In 2008, it was worth almost as much as the US market (US$35 billion), even though it was still significantly smaller in terms of volume.

How much cocaine must be shipped to satisfy this growing demand? Taking seizures into account,[71] some 212 mt would have to have left South America to the European market in 2008.[72] The growth of the European market has meant that a growing share of the total cocaine production needs to be funneled toward the EU/EFTA countries, increasing from 13% in 1998 to 25% of total production in 2008.

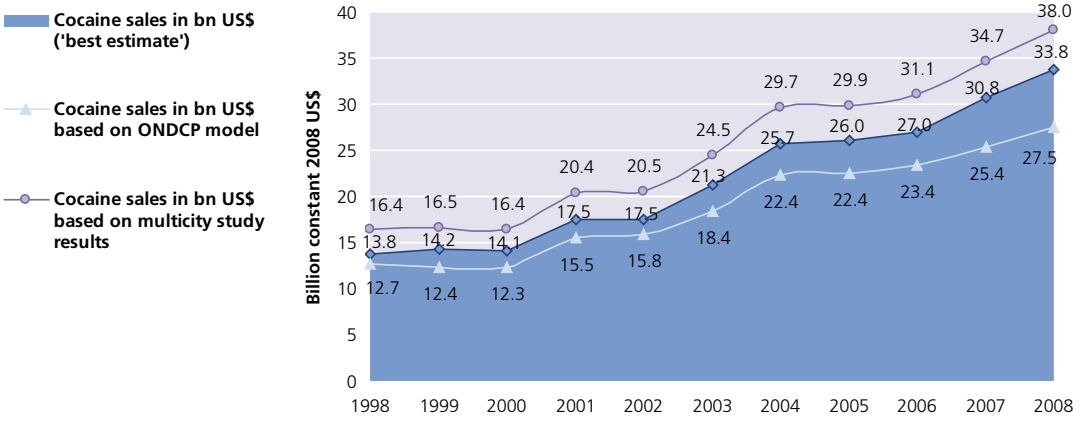
Where does the money go? Out of European cocaine sales, less than 1% goes to the Andean coca farmers. Another 1% goes to the processors and traffickers within the Andean region. About 25% of the final sales value accrues to the international traffickers who ship the cocaine from the Andean region to the main entry points. Shipping the cocaine from the entry points to the wholesalers in the final destination countries across

71 Based on the Annual Reports Questionnaire Data, about 55% of the seizures made in the Caribbean and 61% of the seizures made in South America excluding the Andean countries were linked to shipments towards Europe in 2008, up from 47% and 46% respectively in 2002. For seizures made in Africa it was assumed that the bulk of them was linked to shipments towards Europe.

72 Range: 189–232 tons.

Fig. 51: Size of the EU/EFTA cocaine market in billions of constant 2008 US$

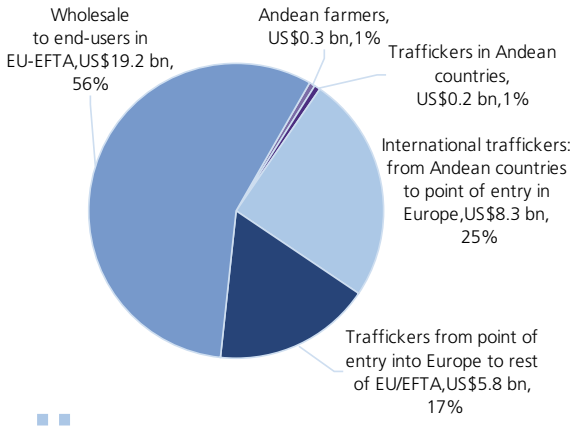
Sources: UNODC ARQ; Government reports; UNODC, *World Drug Report 2009*; EMCDDA, *Statistical Bulletin 2009*; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*



Europe generates a further 17% of the retail value. More than half (56%) of the value is, however, made within the destination countries, between the wholesalers and the consumers. As there are far more dealers at the national level, the per capita income of the dealers at the national level is (like in North America) likely lower than among the smaller group of international cocaine traffickers.

Fig. 52: 'Value-added' of cocaine sales among the EU/EFTA countries in 2008, billion US$

Sources: Multiple sources[73]



73 UNODC, Annual Reports Questionnaire Data; Government reports; UNODC, *2009 World Drug Report*, Vienna 2009; EMCDDA, *Statistical Bulletin 2009*, Lisbon 2009; United Nations, Department of Economic and Social Affairs, Population Division. *World Population Prospects: The 2008 Revision*, 2009; Home Office, *Sizing the UK market for illicit drugs*, London 2001, Home Office, *Measuring different aspects of problem drug use: methodological developments*, Home Office Online Report 16/06, London 2006; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*, Vienna 2009; UNODC, *2005 World Drug Report, Volume 1: Analysis*, Vienna 2005.

How does the market operate?

Trafficking of cocaine to Europe is, to a significant extent, organized by Colombian organized crime groups that forge alliances with various criminal groups operating in Europe, notably with groups in Spain, Italy and the Netherlands. In most European countries, the majority of those arrested for drug trafficking are local citizens, but the Colombian groups act as importers and, to a lesser extent, as wholesalers. Their involvement in retail markets is limited to Spain. Between 21% and 26% of all foreigners arrested for cocaine trafficking in Spain over the 2004-2007 period were Colombian nationals. The proportion rose to 29%, or nearly 1,000 individuals, in 2008.

In addition, groups from the Caribbean region play a role, including Dominicans in Spain, Jamaicans in the United Kingdom and Antilleans in the Netherlands. Other South Americans are also prominent, especially on the Iberian peninsula. In a number of countries in continental Europe, West Africans are active as retailers (as well as small-scale importers), including in France, Switzerland, Austria, Italy, Germany and Portugal.

The largest proportion of non-Portuguese cocaine traffickers arrested in Portugal in 2008 were from Cape Verde (27%) and Guinea-Bissau (19%).

North Africans are prominent in several countries with a Mediterranean coastline or a large North African diaspora, including Spain, Italy, France and the Netherlands. A few groups from the Balkan region have also emerged as players in the international cocaine trade in recent years. In contrast, there is little concrete evidence so far to suggest that the Mexican drug cartels are playing a major role in Europe.

Fig. 53: Nationality of persons arrested in Spain for trafficking cocaine into or within the country, 2008

Source: UNODC ARQ

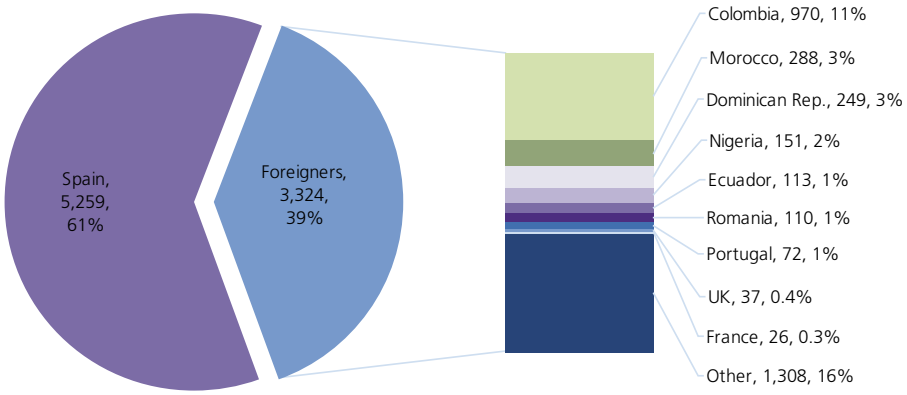
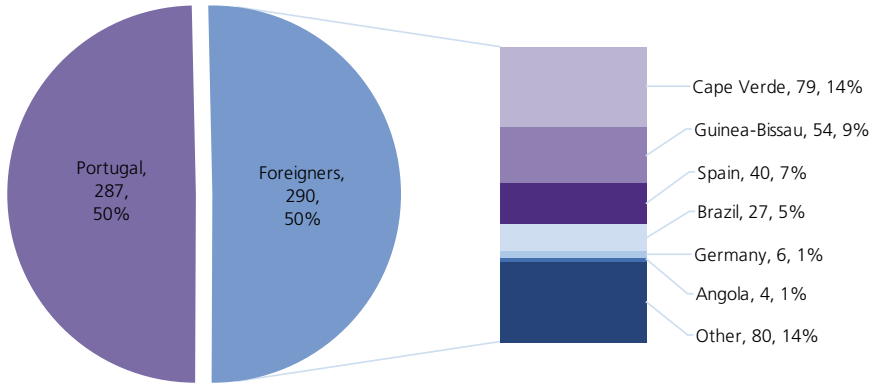


Fig. 54: Nationality of persons arrested in Portugal for trafficking cocaine into or within the country, 2008

Source: UNODC ARQ



In the Netherlands, criminal groups from the 'Dutch Caribbean' (Aruba, Netherlands Antilles and Suriname) have long been active alongside Colombians.[74] In recent years, Nigerian groups expanded in Amsterdam, working inter alia through air couriers flying to the Netherlands from the Netherlands Antilles and Suriname. As controls improved on direct flights, they also started to use other transit countries such as the Dominican Republic, Peru and Mexico.[75] Some of the traffic has also been displaced to Antwerp (Belgium), following improved controls in the port of Rotterdam (Netherlands). This traffic is still largely controlled by Colombian groups,[76] though Albanian groups, working at the port facilities, also seem to play a role in Antwerp.

Most of the cocaine needed to supply the United Kingdom, Europe's largest cocaine market, transits another European country, rather than being shipped directly. Bulk maritime shipments on merchant vessels or yachts from ports in Colombia or the Bolivarian Republic of Venezuela cross the Atlantic to the Iberian Peninsula. There, the cocaine is sold to local British criminals, who then smuggle it to the United Kingdom. To a lesser extent, cocaine is also imported by British criminals from the Netherlands. Thus, some 75% of the cocaine destined for the UK market is estimated to have been carried across the Channel, concealed in trucks, private cars or by human couriers ('mules').

74 Damian Zaitch, *Trafficking Cocaine – Colombian Drug Entrepreneurs in the Netherlands (Studies of Organized Crime)*, The Hague 2002.

75 US Department of State, *International Narcotics Control Strategy Report*, March 2009.

76 Ibid.

Fig. 55: Nationality of traffickers arrested in Italy for trafficking cocaine into or within the country, 2008

Source: UNODC ARQ

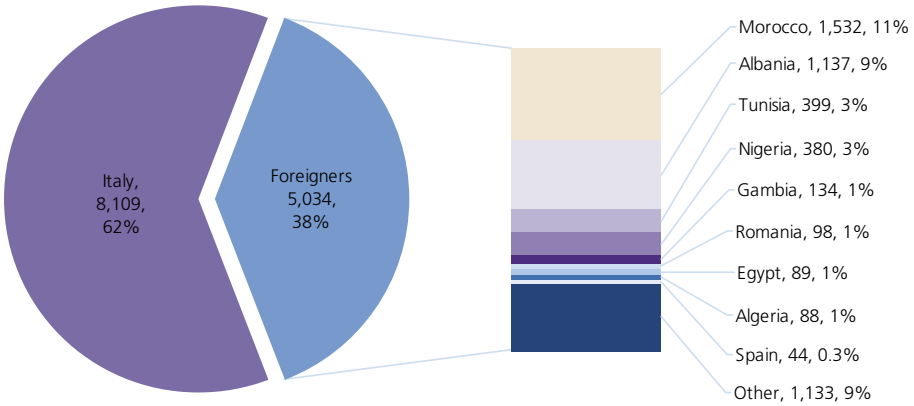
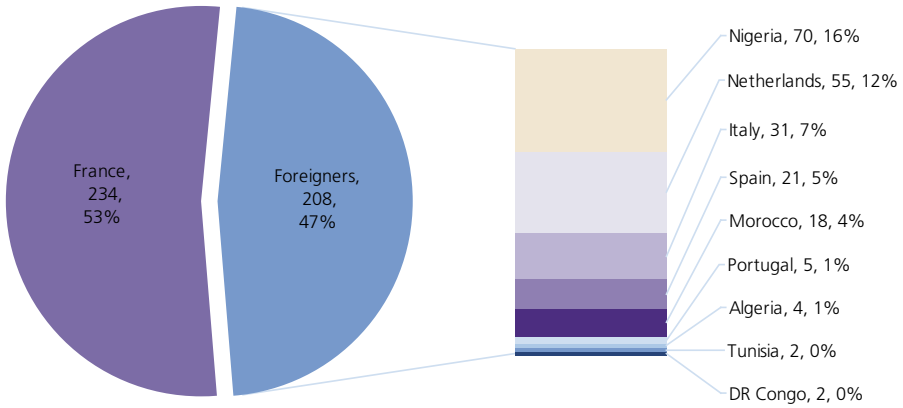


Fig. 56: Nationality of traffickers arrested in France for trafficking cocaine into or within the country, 2006[77]

Source: UNODC ARQ



In Italy, Colombian, Dominican and other Latin American organizations are working with Italian organized crime groups (notably the 'Ndrangheta) to import cocaine in commercial cargo or containerized shipments.[78] Italy is also one of the few European countries where close links between organized Mexican groups (the Gulf Cartel) and local organized crime groups have been confirmed.[79] As of 2007, the Camorra, located in Naples, was reported to have begun trafficking cocaine to Italy from Spain, as well as directly from South America. More recently, the Sicilian mafia has also become involved, getting support from the 'Ndrangheta and the Camorra to bring cocaine into the areas it controls.[80] West African and North African groups are active in retailing and small-scale import, as well as groups from the Balkans, in particular Albanians and Serbians. Several West African and Albanian groups import the cocaine from the Netherlands to northern Italy.[81]

The French cocaine market used to be rather small,

77 Sample of arrested cocaine traffickers (n = 442) for which nationality was identified; number of all arrested cocaine traffickers in France in 2006: N = 2,561.

78 Presidenza del Consiglio dei Ministri, Dipartimento Politiche Antidroga, *Relazione Annuale Al Parlamento Sullo Stato Delle Tossicodipendenze in Italia 2008,* Rome 2009.

79 US Department of State, op cit.

80 Presidenza del Consiglio dei Ministri, op cit..

81 US Department of State, op cit.

Fig. 57: Nationality of those arrested for sale of cocaine in Germany, 2008

Sources: UNODC ARQ and Bundeskriminalamt, *Polizeiliche Kriminalstatistik 2008*, Wiesbaden 2009

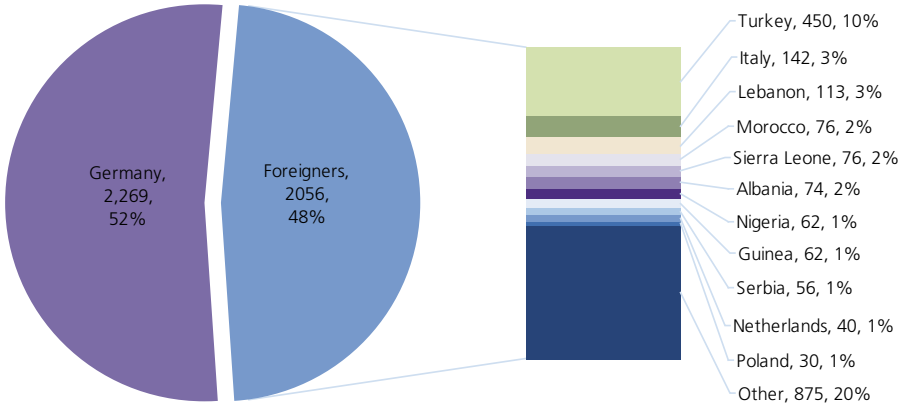
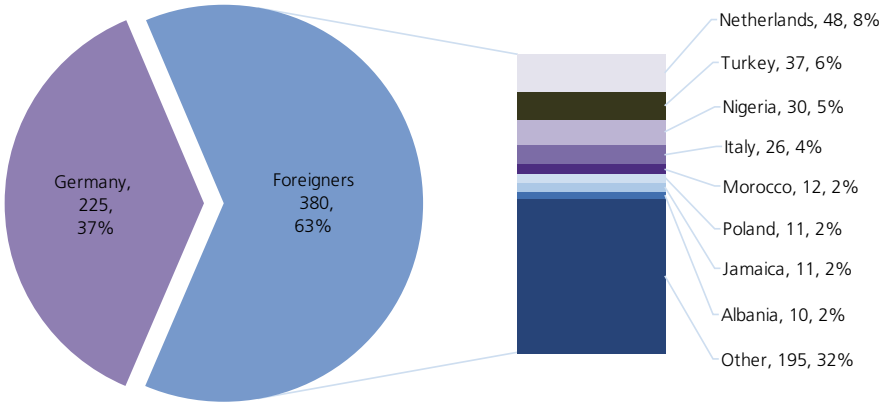


Fig. 58: Nationality of 'cocaine importers' arrested in Germany, 2008

Sources: UNODC ARQ and Bundeskriminalamt, *Polizeiliche Kriminalstatistik 2008*, Wiesbaden 2009



though this has started to change in recent years, partly due to the growing importance of Africa as a transit location. When West Africa became a more prominent transit area after 2004, West African traffickers also became more prominent. In 2008, cocaine traffickers from Togo, Benin, Ghana, Nigeria, Senegal and the Democratic Republic of the Congo were arrested. North African and European traffickers have also been arrested.[82]

The bulk of cocaine traffickers in Germany were not born in Germany.[83] The largest group of foreign traffickers in Germany were Turkish (22% of all foreign cocaine traffickers in 2008). This is a recent development: Turkish traffickers have traditionally been associated with heroin. The second largest foreign group detected are traffickers from Italy (7%), often associated with the 'Ndrangheta and other Italian mafia groups. Various groups from the Middle East (Lebanon and Morocco: 5%) and from West Africa (Sierra Leone, Nigeria and Guinea: 4%) were also prominent.[84] Those arrested for 'cocaine imports' comprise a smaller and more varied group, with the top foreign nationalities being Dutch (13%) and Turkish (10%, typically acquir-

82 UNODC ARQ, 2002-2008.

83 Bundeskriminalamt, *Polizeiliche Kriminalstatistik 2008*, Wiesbaden 2009; Bundeskriminalamt, *Organisierte Kriminalität, Bundeslagebild 2008*, Wiesbaden 2009.

84 Bundeskriminalamt, *Organisierte Kriminalität, Bundeslagebild 2008*, Wiesbaden 2009.

ing the cocaine from the Netherlands). Nigerian (5%) and Italian individuals (4%) also feature prominently.[85]

Impact of this specific flow

The social and economic impact of the flow of cocaine to Europe has been – so far at least – less severe than for North America. Though the proportion of people in need of treatment in Europe for cocaine abuse has more than tripled over the last decade (from 3% of total drug treatment demand in 1997/1998 to 10% in 2007/2008), it is still far lower than in North America (31% in 2007/2008).

The number of cocaine-related deaths is also far lower in Europe than in North America. According to the latest national data, less than 700 people in the EU/EFTA countries died due to cocaine use, which is less than 0.2 deaths per 100,000 inhabitants, and only 8% of all drug-related deaths. As in North America, deaths from poly-drug use are common in Europe. German data show, for example, that in only 14% of all 'cocaine-related' death cases was cocaine the only substance involved.[86]

Cocaine use in Europe is also less associated with violence than in North America. This is most likely because powder cocaine is still dominant in Europe, and it is crack that is most associated with violent crime. There does appear to be a link with acquisitive property crime, however.

England and Wales conduct arrestee drug testing. These studies found that 13% of the arrestees in 2005/2006

Table 10: Reported cocaine related deaths in EU/EFTA countries in 2008 or latest year available*

* EU/EFTA countries which provide a breakdown of drug-related mortality by drug type.
Sources: UNODC ARQ; EMCDDA, *Statistical Bulletin 2009*; EMCDDA, National Reports

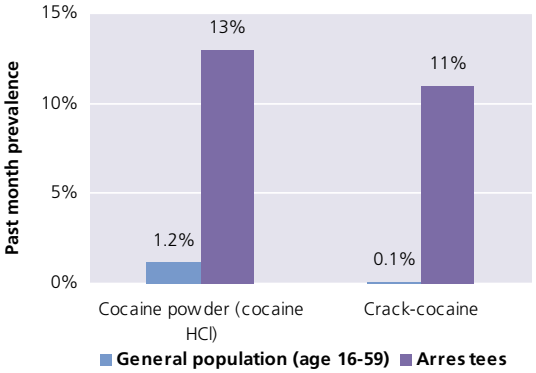
Country	Year	Cocaine-related deaths	Drug deaths	Cocaine in % of drug deaths	Cocaine deaths per 100,000 inhabitants	Source	Comments
Spain	2006	257	428	60.0%	0.58	EMCDDA	overdose
United Kingdom	2007	246	3,359	7.3%	0.40	ARQ	all deaths
Germany	2008	126	1,449	8.7%	0.15	Govt	all deaths
Portugal	2007	103	314	32.8%	0.96	EMCDDA	all deaths
France	2008	51	233	21.9%	0.08	ARQ	all deaths
Italy	2008	37	502	7.4%	0.06	ARQ	overdose
Ireland	2005	34	159	21.4%	0.77	ARQ	overdose
Netherlands	2008	22	129	17.1%	0.13	ARQ	overdose
Denmark	2007	5	205	2.4%	0.09	ARQ	all deaths
Malta	2008	3	8	37.5%	0.74	ARQ	all deaths
Finland	2007	3	229	1.3%	0.06	ARQ	all deaths
Poland	2006	2	241	0.8%	0.01	ARQ	all deaths
Slovenia	2005	1	85	1.2%	0.05	ARQ	all deaths
Luxembourg	2002	1	35	2.9%	0.21	ARQ	all deaths
Czech Republic	2006	1	212	0.5%	0.01	ARQ	overdose
Sweden	2006	0	125	0.0%	-	ARQ	all deaths
Romania	2007	0	23	0.0%	-	EMCDDA	all deaths
Liechtenstein	2008	0	1	0.0%	-	ARQ	all deaths
Hungary	2008	0	194	0.0%	-	ARQ	all deaths
Bulgaria	2006	0	48	0.0%	-	EMCDDA	All deaths
Iceland	2007	0	38	0.0%	-	ARQ	all deaths
Cyprus	2007	0	22	0.0%	-	ARQ	overdose
Total		**635**	**7,611**	**8.3%**	**0.14**		

85 Ibid.

86 Bundeskriminalamt, *Rauschgift, Jahreskurzlage 2008, Tabellenanhang*, Wiesbaden 2009.

Fig. 59: Past month prevalence of cocaine use among the general population versus cocaine use among arrestees in England and Wales, 2005/2006

Sources: Home Office, *The Arrestee Survey 2003-2006*, 2nd edition, London, November 2007; Home Office, "Drug Misuse Declared: Findings from the 2005/06 British Crime Survey, England and Wales," *Home Office Statistical Bulletin*, October 2006



had used cocaine powder and 11% crack-cocaine in the previous month.[87] This is less than in the United States but much more than in the general population: household surveys during the same period indicate that only 1.2% of the population had used cocaine powder and 0.1% had used crack-cocaine in the previous month.[88] A previous arrestee survey for England and Wales (2003/2004) found that 68% of those arrested for shoplifting, 63% of those arrested for burglary, 41% of those arrested for 'other theft' and 23% of those arrested for assault had consumed either crack-cocaine, cocaine powder or heroin within the previous 12 months.[89]

The consequences of trafficking and cocaine consumption in Europe are dwarfed by the serious repercussions for the cocaine-producing countries (in terms of cocaine-generated violence and insurgencies) and for many of the transit countries in South America, Central America, the Caribbean and Africa, notably West Africa where some of the smaller countries are easy targets for cocaine trafficking organizations that operate internationally.

1.3.4 Implications for response

Prevention and treatment can work. The significant decline in cocaine use in the United States over the last three decades can be linked, inter alia, to increased spending on prevention and treatment. However, not all prevention efforts are effective. Simplistic interventions can generate an interest in drugs and can lead to even higher use levels. Treatment of problem drug users, who consume the bulk of the drugs, can reduce the demand for drugs. But this requires time as relapse rates are usually high. Some users may never achieve abstinence. It also seems that treating cocaine dependence is even more difficult than treating other drug addictions and some new approaches ('cocaine vaccinations') are being explored.

Many studies have shown that treatment is an effective investment to reduce drug demand, including demand for cocaine,[90] despite its shortcomings. The fight against the drug cartels is a legitimate and necessary undertaking, but this may not automatically reduce the cocaine market. History has shown that break-ups of big cocaine cartels may lead to the emergence of a larger number of smaller groups. Increased competition can produce lower prices, which could even encourage higher use levels.

87 Home Office, *The Arrestee Survey 2003-2006*, 2nd edition, London, November 2007.

88 Home Office, "Drug Misuse Declared: Findings from the 2005/06 British Crime Survey, England and Wales", *Home Office Statistical Bulletin*, October 2006.

89 Home Office, "The Arrestee Survey Annual Report: Oct. 2003-Sept. 2004", *Home Office Statistical Bulletin*, November 2006.

90 William S. Cartwright, Cost–Benefit Analysis of Drug Treatment Services: Review of the Literature, *The Journal of Mental Health Policy and Economics,J. Mental Health Policy Econ. 3*, 11–26 (2000); Treatment Research Institute at the University of Pennsylvania, *Economic Benefits of Drug Treatment: A critical Review of the Evidence for Policy Makers,* February 2005; Wim van den Brink, Amsterdam Institute for Addiction Research, Academic Medical Center University of Amsterdam, "Effectiveness and Cost-Effectiveness of Drug Dependence Treatment", presentation given at the Donor Conference in Support of the UNODC-WHO Joint Program on Drug Dependence Treatment and Care, The Hague, 10 February 2010. Results from eleven meta studies in the USA suggested that the main economic benefits from drug treatment (all drugs; totaling, on average, some US$49,500 per patient) were in the form of avoided criminal activity: US$42,200 per patient or 85% of total economic benefits. (Kathyrin. E. Mc. Collister and Michael T. French, *The relative contribution of outcome domains in the total economic benefit of addiction interventions: a review of first findings*, 2003). One previous US study, based on more than 500 cocaine dependent patients in the Drug Abuse Treatment Outcome Study suggested that the treatment costs for outpatient cocaine treatment were, on average US$1,422 while the benefits from avoided crime among this group amounted to US$1,891 per patient, equivalent to a benefit to cost ratio (BCR) of 1.3. The same study found that long-term residential cocaine treatment resulted in costs of, on average, US$11,016 while average avoided crime costs amounted to US$18,461, or a BCR of 1.7. Including other economic benefits, the BCR for cocaine was found to amount to 1.6 and 1.9, respectively, for outpatient and long-term residential cocaine treatment, suggesting that for US$1 invested into cocaine treatment about US$2 can be expected to be generated in economic benefits. (Flynn, P.M., Kristiansen J.V., Porto R.L., "Costs and benefits of treatment for cocaine addiction", *Drug and Alcohol Dependence, 57* (1999), pp. 167-174). A general review of economic benefit to cost ratios in drug treatment (all drugs), reported in the literature for residential and outpatient drug treatment, found BCRs ranging from 1.3 to 6.5 (Treatment Research Institute at the University of Pennsylvania, 2005) with an average of 3.4, suggesting that for each dollar invested into drug treatment one should expect economic benefits of more than US$3 (and thus more than for treating cocaine dependent persons). According to a West Coast Cost-Benefit Analysis, every dollar invested by the authorities in drug treatment in this region was reported to have even saved, on average, US$7 in other costs (health care and emergency room visits, criminal justice proceedings, imprisonment, food stamps, unemployment, workers' compensation, child welfare and other related services; *Oregon Research Brief on Addiction Treatment Effectiveness*, 2003).

The concept of shared responsibility has long been adopted by UN Member States. They have also recognized the need for a balanced approach between supply and demand reduction efforts. Nonetheless, these general concepts still need to be better translated into operational terms. Uncoordinated efforts, leading to isolated sectoral and geographical successes, have often only displaced the problem, leaving the global cocaine market intact. In the mid-1990s, for example, law enforcement efforts put an end to large-scale air trafficking of coca paste or cocaine base between Peru and Colombia. Coca leaf prices fell in Peru and farmers turned to other crops. The problem was, however, not really solved as this decline was offset by increases in coca cultivation in Colombia. Later, cocaine laboratories emerged in Peru, generating new demand for coca and resulting in higher coca leaf prices, thus leading to a resurgence of coca cultivation in that country in the twenty-first century. Similarly, declines in cocaine use in the United States prompted drug traffickers to seek alternative markets. Thus, reductions in North America were offset by increases in the use of cocaine in Europe and South America over the last two decades.

All of this indicates that coordination of national and sectoral efforts in the context of an internationally integrated strategy has been missing. Unless a more integrated international strategy is developed, sustainable success may remain an elusive goal. Member States recognized this in their Political Declaration[91] of March 2009, stressing that:

"*… the world drug problem remains a common and shared responsibility that requires effective and increased international cooperation and demands an integrated, multidisciplinary, mutually reinforcing and balanced approach to supply and demand reduction strategies*."

91 "Political Declaration and Plan of Action on International Cooperation towards an Integrated and Balanced Strategy to Counter the World Drug Problem", in United Nations Commission on Narcotic Drugs, *Report on the fifty-second session* (14 March 2008 and 11-20 March 2009), E/2009/28; E/n.7/2009/12, pp. 37-77.

1.4 The global ATS market

1.4.1 What are ATS?

Amphetamine-type stimulants (ATS) refer to a group of synthetic substances comprised of amphetamine-group (primarily amphetamine, methamphetamine and methcathinone) and ecstasy-group substances (MDMA and its analogues). The amphetamine-group substances were originally synthesized in the late nineteenth century and marketed as over-the-counter nasal decongestants beginning in 1932. During the Second World War, the various amphetamines were used by military personnel and stockpiles were released onto the market after the war.[1]

The uncontrolled use of the amphetamine-group substances led to widespread abuse. By the 1970s, the therapeutic usefulness of these substances was recognized to be limited. National and international control measures appeared, as did a decline in licit pharmaceutical manufacture. However, demand for these substances did not decline at the same rate and clandestine manufacture gradually became the primary source of supply for these substances.

The ecstasy-group substances are chemically related to the amphetamines. The major compound, MDMA and other analogues such as MDA and MDEA were first synthesized early in the 1900s. While MDMA found limited therapeutic use in the 1970s, its recreational use increased dramatically throughout the 1990s and was associated with rave culture in the developed world.

All ATS are available in diverse forms and vary in purity. Methamphetamine or amphetamine can be in powder, tablet, paste or crystalline form while ecstasy is usually available in tablet or powder form.

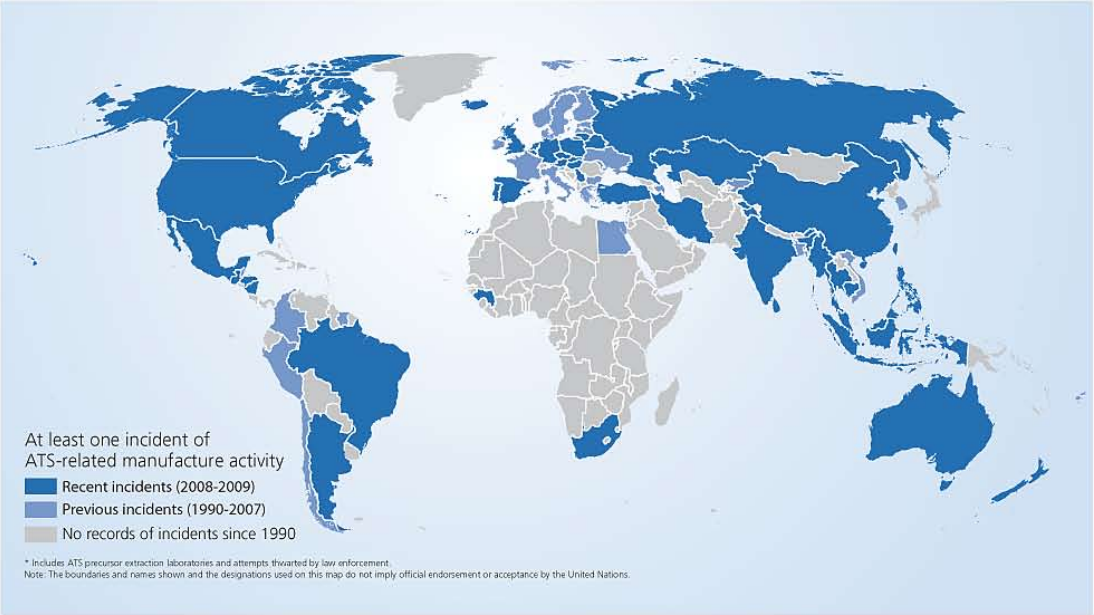
The spreading use of ATS can be attributed to their attractiveness to both users and the criminal organizations who manufacture them alike. They appeal to the needs of today's societies and have become part of what is perceived to be a modern lifestyle, both recreationally and occupationally. Their use is believed to enhance performance including sexual performance and their use is often initiated by mouth in 'convenient' and discrete pill form that avoids the dangers of injection or social stigma of smoking. They are affordable, often sold in single tablet units, which are often erroneously perceived as being less harmful than in other forms.

The popularity of ATS is also a result of a market potential with continuously high profits and low risks with little initial investment. Unlike the cultivation of the coca leaf or opium poppy, ATS manufacture is not limited to certain geographic locations, thus laboratories can clandestinely operate anywhere and be relocated as risk increases. One unique characteristic is that they can be synthesized from a variety of starting materials (precursor chemicals) using a variety of methods. If a traditional precursor becomes unavailable, replacements are easily found, often facilitated by readily available information on the Internet. New synthetic stimulants not yet under international controls can also be brought quickly to market. Additionally, large profits are not only made from the sale of the drug itself, but increasingly from illicit sourcing of the key precursor chemicals.

1 UNDCP Technical Series Number 3, *Amphetamine-type stimulants: a global review*, 1996.

Map 7: Member States reporting ATS-related manufacture* since 1990

Sources: UNODC ARQ/DELTA; Government reports; UNODC, Global SMART Update 2009, Volume 1, 2 and 3 (March); Amphetamines and Ecstasy: 2008 Global ATS Assessment (United Nations publication, Sales No. E.08.XI.12)



* Includes ATS precursor extraction laboratories and attempts thwarted by law enforcement.
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

1.4.2 The dimensions of the ATS market

Assessing the size and dynamics of illicit ATS markets is fraught with numerous obstacles due to the clandestine nature of these markets. Estimates are largely based on data reported by Member States but unfortunately, little more than half of Member States consistently provide annual information to UNODC. Irregular and/or incomplete reporting—even in developed regions—compounded by the varying quality of data provided from several key regions hinders the ability to provide timely evidence-based responses. For example, the assessment of prevalence of use, a basic demand indicator, only occurs annually in two countries and on average every three to five years in most countries, when it occurs at all. A number of countries on the Asian continent, including China, are believed to have significant levels of ATS abuse, but figures are elusive as many have never had nationally representative household surveys on drug use.

Another significant limitation is the lack of systematic forensic information required to accurately assess the specific ATS substances, their precursor chemicals, manufacturing processes, trafficking and the user base. The lack of information also hampers the determination of exactly how much ATS is illicitly manufactured. Manufacture is clandestine and cannot be assessed from remote sensing, as is the case with poppy plants and coca bushes. Previous UNODC models attempted to ascertain manufactured based on the triangulation of consumption, seized end product, and seized precursor chemicals. However, changes in the drug market, particularly those related to precursor chemical seizures and ability to ascertain seizure rates, made this model less useful. Additionally, Member State reports of clandestine laboratories dismantled annually fail to include standardized measures of manufacture capacity such as the frequency, duration and amount of each production cycle, thus limiting their analytical value. Because of these limits the scale of uncertainty is reflected in the range of many of the estimates provided.

The supply of ATS

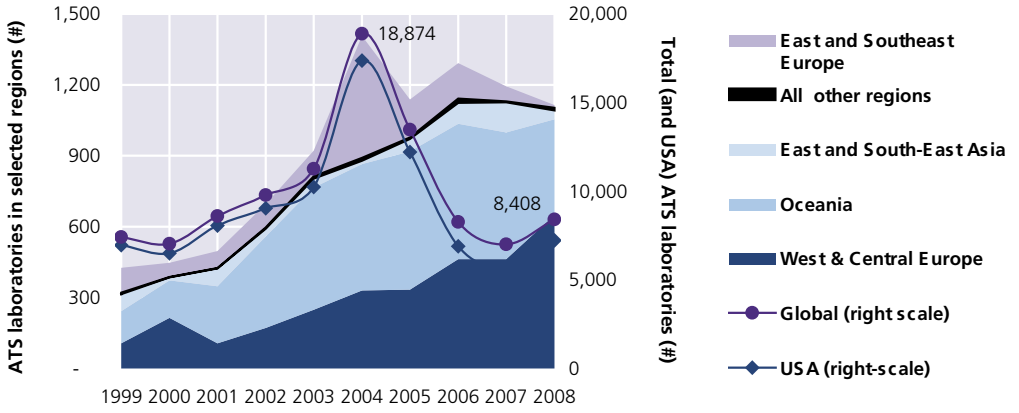
Unlike the illicit cultivation of the coca plant and opium poppy which is constrained to specific locations, the manufacture of ATS is not geographically limited. ATS laboratories therefore tend to be located close to consumer markets. Since 1990, there has been a spread in ATS manufacture with more than a third of Member States having reported ATS-related manufacture activity to date.[2]

Significant ATS manufacture occurs throughout East and South-East Asia (predominately methamphetamine

2 Manufacture can be considered in two broad categories—addiction-based, where small operations synthesize enough drug for the user, and economic-based operations which can be up to the size of industrial factories.

Fig. 60: Number of reported ATS laboratories (all sizes), by region, 1999-2008

Source: UNODC ARQ/DELTA



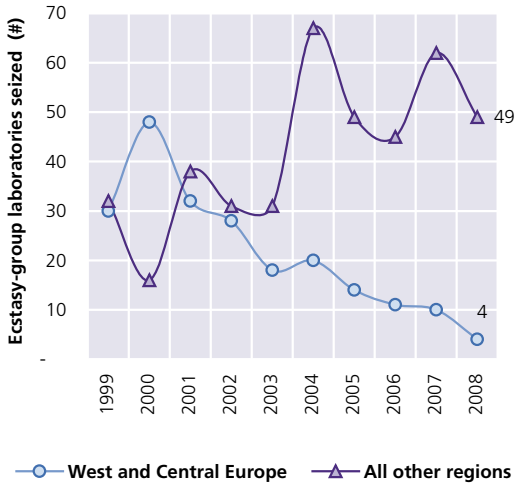
and – in recent years - also ecstasy), North America (methamphetamine and ecstasy in all three countries), Europe (mostly amphetamine and ecstasy, with increasing methamphetamine manufacturing), Oceania (methamphetamine and, to a lesser extent, amphetamine and ecstasy), and parts of Africa, most notably in the south (methamphetamine and methcathinone).

Since 2000, significant ATS manufacture has been reported to UNODC in either number of clandestine laboratories or size of operations from Australia, Belgium, Bulgaria, Canada, China,[3] the Czech Republic, Germany, Indonesia, Malaysia, Mexico, Republic of Moldova, Myanmar, the Netherlands, New Zealand, Philippines, Poland, the Russian Federation, Slovakia, South Africa and the United States of America. The overall number of dismantled ATS laboratories rose strongly until 2004, but declined thereafter and is now back to the level a decade ago. This reflects mainly the trends reported from the United States which regularly dismantles the majority of all clandestine ATS labs worldwide, typically concerning smaller methamphetamine incidents. The reported decline after 2004 can be linked to improvements in US precursor controls which made access to such chemicals in the United States far more difficult. The numbers in several regions outside the United States, in contrast, increased over the last decade, particularly for methamphetamine – though some stabilization can be noticed for the period after 2004.

A shift can be noted in the manufacture of ecstasy-group substances, which used to be located predominantly in Western Europe, closer to the main consumer market. Over the past 10 years, manufacture of ecstasy-group substances has shifted away from Europe to a number of consumer markets around the world. Large-scale manufacturing operations are more frequently being dismantled in East and South-East Asia, the Americas and Oceania. In 2008, only four ecstasy laboratories were reported to have been seized in West and Central Europe.

Fig. 61: Ecstasy-group laboratories by region, 1999-2008

Source: UNODC ARQ/DELTA.

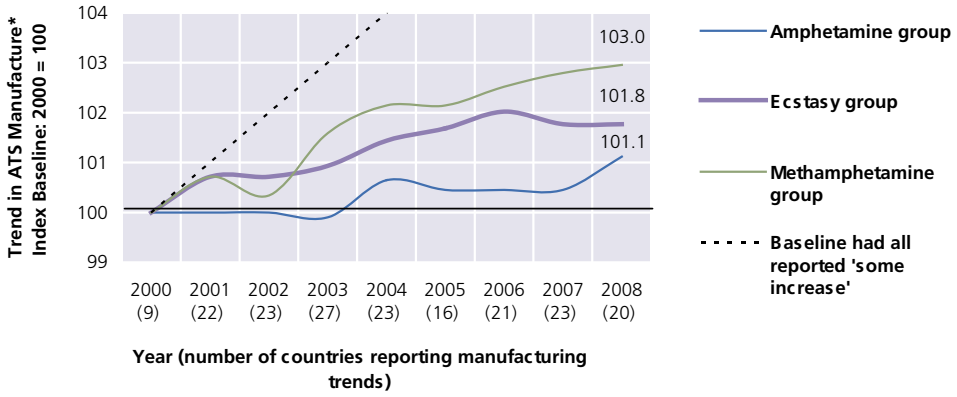


To supplement quantitative data, UNODC requests Member States in the Annual Reports Questionnaire (ARQ) to provide insights as to whether experts believe the trends in manufacturing are changing over time. Each year between 2000 and 2008, an average of 23 countries reported on these trends. Assigning a value to

3 Includes all provinces and Special Administrative Regions.

Fig. 62: Expert perceptions (unweighted) on ATS manufacturing trends, 2000-2008

Note: Expert perception in manufacturing trends were not weighted by the size of the countries' ATS manufacture as the latter is difficult to determine. Therefore, it cannot be excluded that countries with overall minor ATS manufacture may have a disproportionate influence on the global trend. Figures exclude clandestine poly-drug and other synthetic drug manufacture.
Source: UNODC ARQ/DELTA



the experts' responses[4] and trending them over time (indexed using the year 2000 as the baseline of 100) suggests that the trend in methamphetamine manufacture is perceived to be on the increase in most reporting countries, while until recently amphetamine has remained relatively unchanged. Trends in ecstasy manufacture, on the other hand, are perceived to have stabilized since 2006.

The expert perception trends of increased amphetamine and methamphetamine manufacture over this period are, however, supported by several other data, including rising seizures reported throughout this period, a growing proportion of countries reporting seizures of these substances, and both the volume and increasing size of dismantled laboratories.

Over the past decade, the proportion of countries which reported seizures of ATS has increased markedly, indicating an increase in the size and spread of the market. Whereas in 1999, only 36% of all Member States returning an ARQ reported seizing amphetamine-group substances (34.4 mt), by 2008 that figure had increased to 50% (47.4 mt), with ecstasy-group substances following a similar pattern.

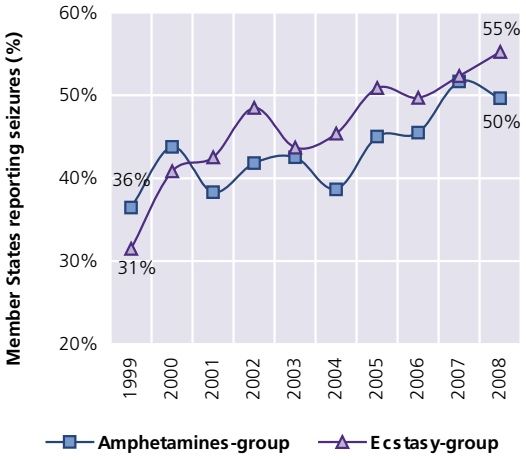
Seizures of ATS have also risen significantly. Between 1999 and 2008, seizures of ATS increased more than 30% from 39 mt to 51.3 mt. A significant amount of this increase was seen in Asia, notably the Near and Middle East with unprecedented increases in seizures of amphetamine-containing pills sold as *Captagon*.

Data show that the proportion of seized methamphetamine has declined, from almost 70% of total ATS seizures to 38%. On the other hand, the percentage of amphetamine has quintupled. However, the amount of ATS diverted from the legitimate market—a significant source of illicit use in many regions—is rarely reported. The regional breakdown of ecstasy seizures shows a shift away from West and Central Europe, the former main region of production.

The trafficking in ATS substances remains to a large extent intra-regional, as manufacture can and does occur close to the consumer markets. In 2008, significant seizures of methamphetamine occurred in the following regions: East and South-East Asia (56%), North Amer-

Fig. 63: Proportion of Member States returning an ARQ reporting ATS seizures, by type, 1999-2008

Source: UNODC ARQ/DELTA



4 ARQ expert perception data is reported unweighted. The following points are allocated if experts perceive: 'strong increase' 2; 'some increase': 1; stable: 0; 'some decline' -1; 'strong decline' -2.

Fig. 64: Seizure trends of ATS, by type, 1999-2008

Source: UNODC ARQ/DELTA

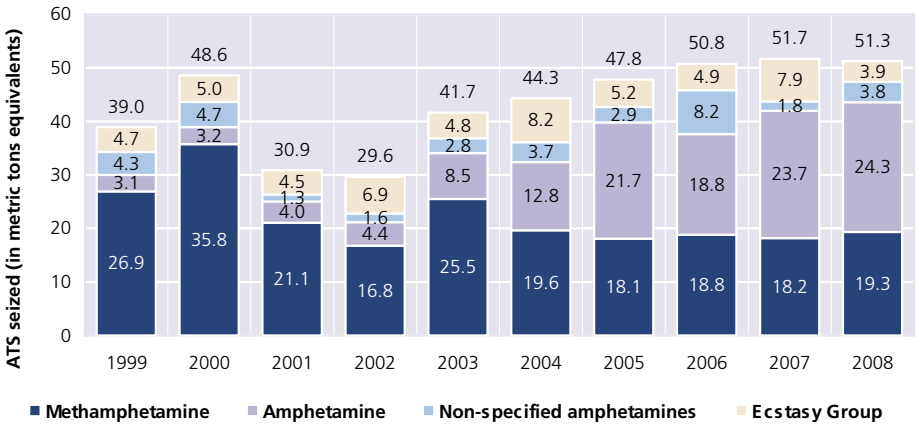


Fig. 65: Breakdown of ATS seizures, by substance group, 1999 and 2008

Source: UNODC ARQ/DELTA

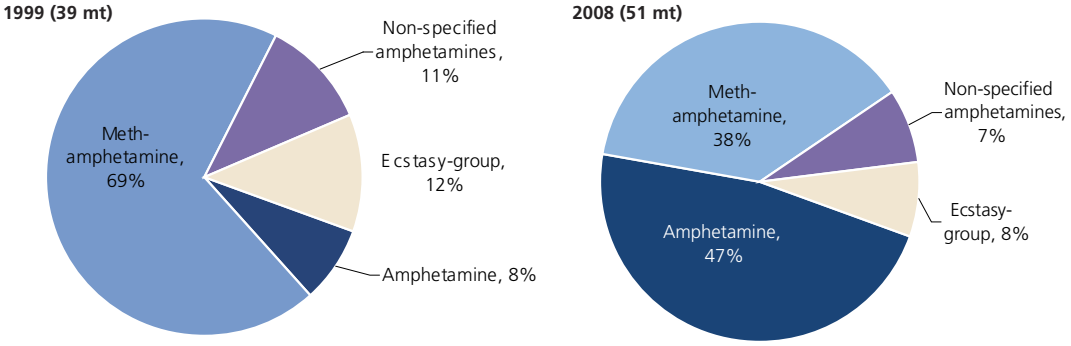
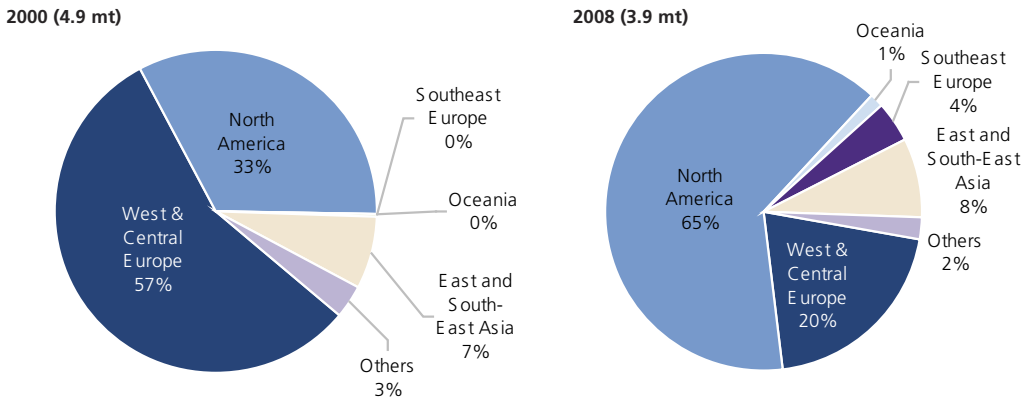


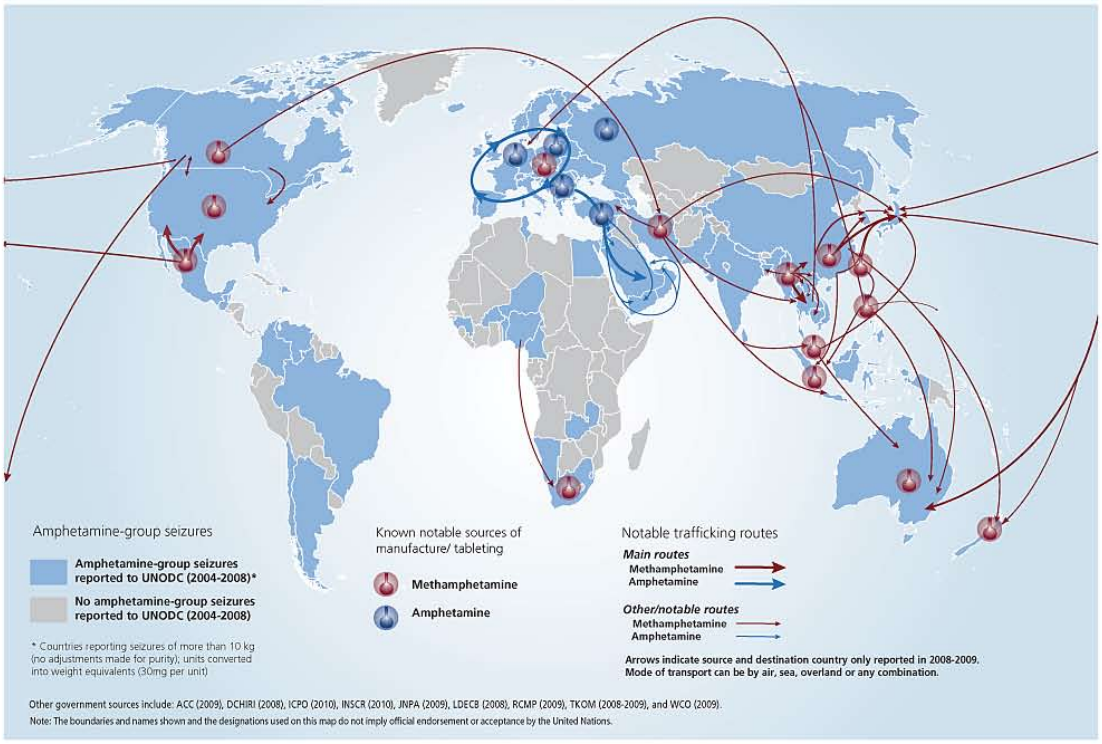
Fig. 66: Breakdown of ecstasy-group seizures, by region, 2000 and 2008

Source: UNODC ARQ/DELTA



Map 8: Notable locations of manufacture and main trafficking routes of amphetamine-group substances, 2008-2009

Sources: UNODC ARQ, Individual Drug Seizure Database, and other government sources



Other government sources include: ACC (2009), DCHIRI (2008), ICPO (2010), INSCR (2010), JNPA (2009), LDECB (2008), RCMP (2009), TKOM (2008-2009), and WCO (2009).

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

ica (42%) and to a much lesser extent, Europe. Amphetamine seizures occurred mainly in the Near and Middle East (63%), West and Central Europe (33%) and to a much lesser extent North America. Ecstasy (MDMA) was mostly seized in North America (65%), West and Central Europe (20%) and to a lesser extent in South-East Europe (4%). These figures may also include significant seizures of drugs sold as 'ecstasy', but often containing substances other than MDMA.

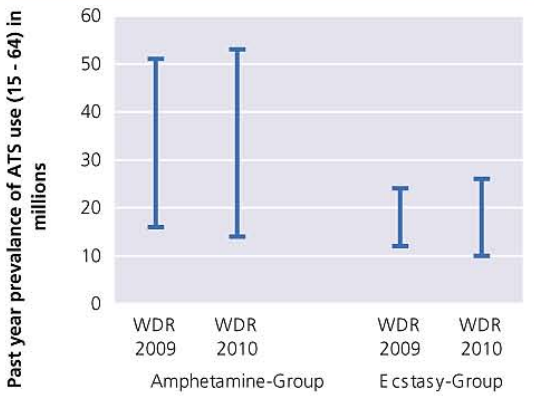
1.4.3 The demand for ATS

Data limitations are even more acute when determining the size of the demand for ATS. In many countries in the world—particularly developing countries—demand-related data on prevalence, patterns and extent of drug use, are not collected or not regularly collected, thus accounting for a substantial amount of uncertainty reflected in prevalence estimates with wide ranges. There is a paucity of established data collection systems and lack of sufficient data to allow for precise trend analysis and historical comparisons. The estimated number of global ATS users is therefore currently expressed in ranges rather than absolute numbers.

Bearing in mind these limitations, past year amphetamine-group and ecstasy-group users are estimated to be in the range of 14 to 53 million and 10 to 26 million, respectively. Thus the global number of ATS users likely continues to exceed the number of opiate and cocaine users combined. The already sizable 2008/2009 ranges are between 6% and 15% larger than the previous year's estimates of 16 to 51 million and 12 to 24 million for

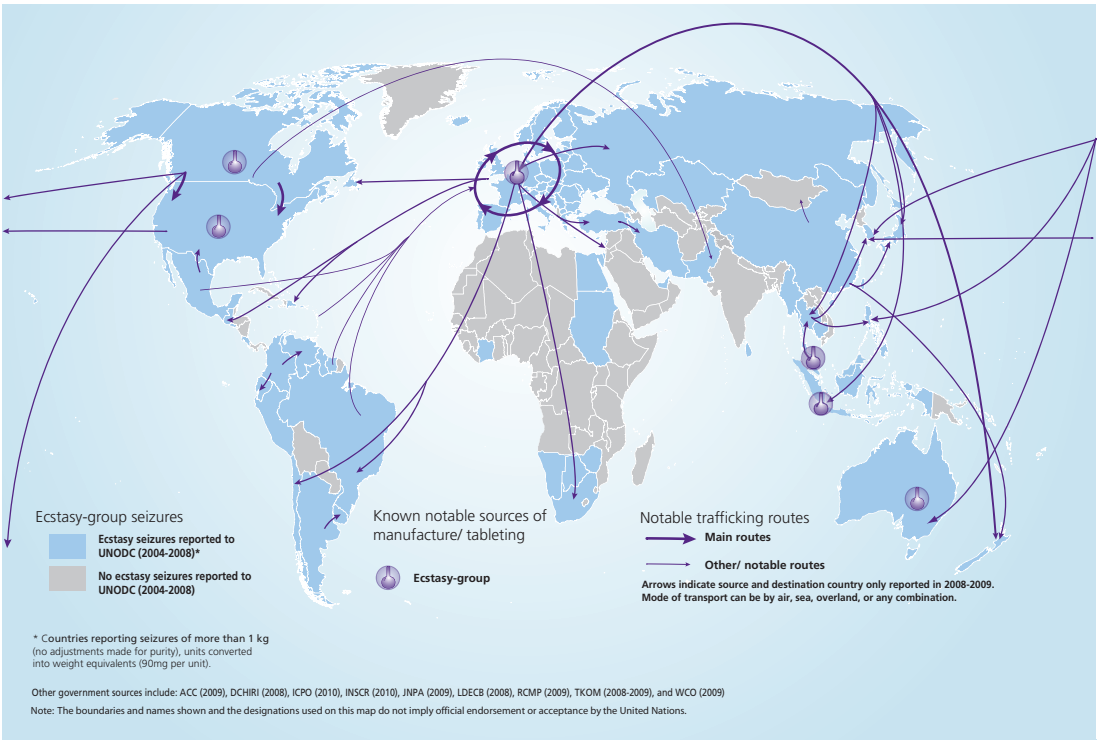
Fig. 67: Estimated annual prevalence of ATS use, 2007/2008 and 2008/2009

Source: UNODC calculations



Map 9: Notable locations of manufacture and main trafficking routes of ecstasy-group substances, 2008

Source: UNODC ARQ

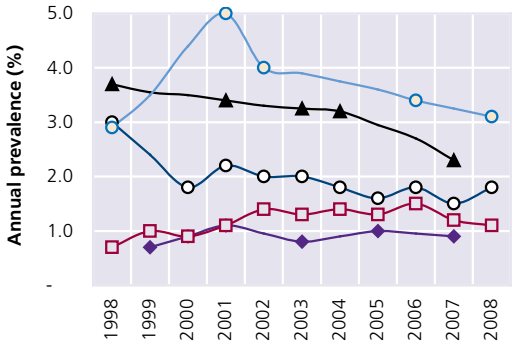


amphetamines-group and ecstasy-group substances, respectively, as little new prevalence data has become available, particularly in Africa and Asia. Indeed, the change in global prevalence may well reflect new reports from developed countries rather than actual changes at the global level.

These large ranges mask shifts in use. In developed ATS markets where regular assessments of drug use among the general population are carried out, annual prevalence of amphetamine-group substances by the general population has actually stabilized or declined over the past several years.

Fig. 68: Annual prevalence in select significant amphetamine-group markets, 1998-2008

Sources: Government reports[5]

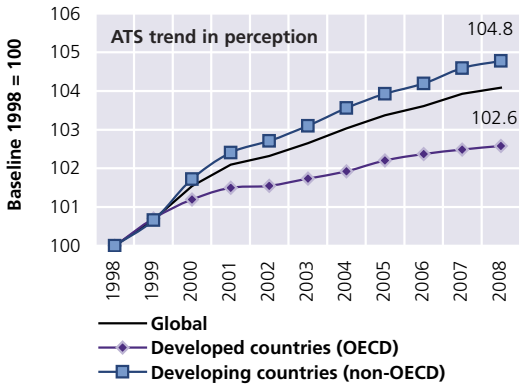


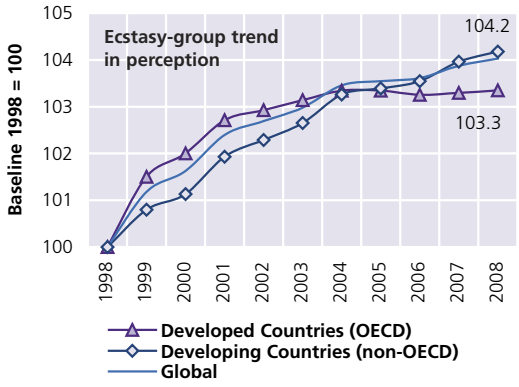
*Data for New Zealand (2008) were adjusted for ages 15-45 to remain comparable with previous past year prevalence studies.

5 Kershaw, C., Nicholas, S. and Walker, A., *Crime in England and Wales 2008/09: Findings from the British Crime Survey and police recorded crime*, Home Office Statistical Bulletin, London, 2009; Substance Abuse and Mental Health Services Administration, *Results from the 2008 National Survey on Drug Use and Health: National Findings*, Office of Applied Studies, Rockville, Maryland, 2009; Australian Institute of Health and Welfare, *2007 National Drug Strategy Household Survey: Drug statistics*, 22, Canberra, 2008; Wilkins C. and Sweetsur P., *Trends in population drug use in New Zealand: Findings from national household surveying of drug use in 1998, 2001, 2003 and 2006*, New Zealand Medical Journal, 121, 61-71, 2008; New Zealand Ministry of Health, *Drug Use in New Zealand: Key Results of the 2007/08 New Zealand Alcohol and Drug Use Survey*, Wellington, 2010; *Informe de la encuesta domiciliaria sobre alcohol y drogas en España* (EDADES) 2007/08, Delegación del gobierno para el plan nacional sobre drogas, Madrid, 2008.

Fig. 69: ATS use trends (unweighted) by type as perceived by experts of developed (OECD) and developing (non-OECD) countries: 1998-2008 (baseline: 1998 = 100)

Note: Expert perceptions of ATS use were not weighted by the size of the countries' population (either total or ATS drug using population), and thus, one cannot exclude the possibility that countries with only minor or emerging ATS use may have a disproportionate influence on the global trend.
Sources: UNODC ARQ, UNODC field offices, UNODC's Drug Use Information Network for Asia and the Pacific (DAINAP)





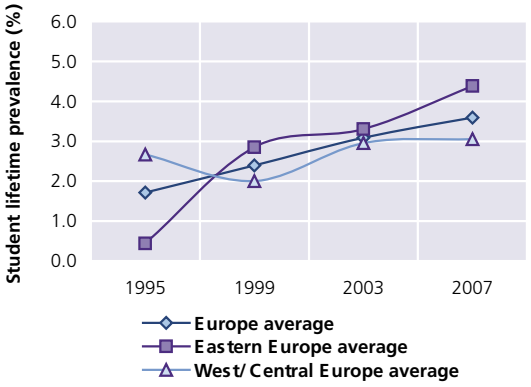
As prevalence data are simply not available in many developing countries, UNODC considers expert perceptions as reported by Member States to help assess demand trends. These trend data[6] over the 1998 to 2008 period suggest that there have been continued increases in ATS demand for developing countries. Beginning around 2000, the rate of increases perceived by experts of developed (OECD)[7] and developing countries (non-OECD) diverged, as a number of key industrialized countries showed a stabilization or decline while developing countries, particularly those in the Americas and parts of Asia reported ongoing increases in ATS use. Asia, with between a third and three quarters of estimated ATS users worldwide, has regionally diverse ATS user groups. This can be seen, for example, in increased treatment demand for problem amphetamine use in the Near and Middle East[8] and increases in methamphetamine use in tablet and high purity crystalline form in countries in South-East Asia in 2008.[9]

'Ecstasy' use as perceived by experts has steadily increased since 1998. Around 2006, developing countries began reporting more frequent and more significant increases in ecstasy use, with their frequency outpacing that of the more mature ecstasy markets in the developed countries, which have largely appeared stable since 2004.

The use of 'ecstasy' in developing markets may be spreading particularly among youth in Latin America and East Europe. For example, between 1995 and 2007, increased lifetime prevalence of 'ecstasy' use among students aged 15 and 16 from Central and East Europe[10] was reported. The unweighted average for students in East European countries in 2007 surpassed that in West

Fig. 70: Unweighted average of lifetime prevalence of 'ecstasy' use among students (age 15-16) in Europe: 1995-2007

Source: Hibell, B., Guttormsson, U., Ahlström, S., Balakireva, O., Bjarnason, T., Kokkevi, A., and Kraus, L., *The 2007 ESPAD Report Substance Use Among Students in 35 European Countries*, The Swedish Council for Information on Alcohol and other Drugs (CAN), Stockholm, 2009



6 If all countries had reported 'some increase', the global trend line would have increased by one point each year and would have reached 110 by 2008.

7 OECD Member countries include: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Slovakia, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States of America.

8 Abu Madini M. S., Rahima S. I. A., Al-Zahrani M. A. and Al-Johi A. O., *Two decades of treatment seeking for substance use disorders in Saudi Arabia: Trends and patterns in a rehabilitation facility in Dammam*, Drug and Alcohol Dependence, 97(3), 2008, pp 231-236.

9 UNODC, *Patterns and trends of amphetamine-type stimulants and other drugs in East and South-East Asia (and neighbouring regions) 2009*, November 2009.

10 Students of Eastern Europe include: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation (Moscow), Slovakia, Slovenia and Ukraine.

Fig. 71: Trends in annual prevalence of select 'ecstasy' markets, 1998-2008

Sources: Government reports[11]

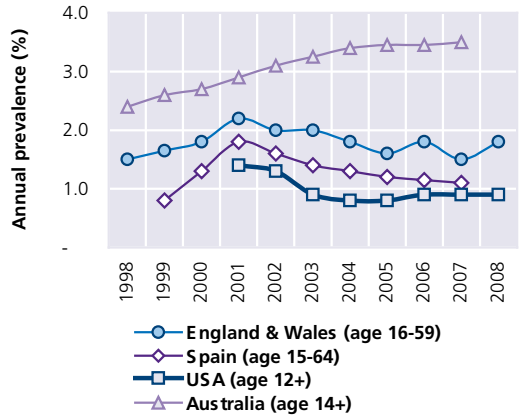
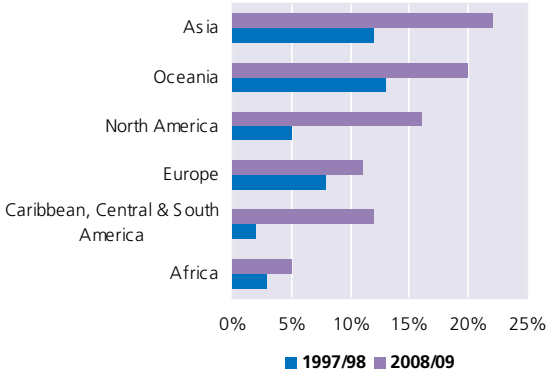


Fig. 72: Changes in unweighted regional treatment demand for problem ATS drug users, as a proportion of all drug treatment

Source: UNODC *2000 World Drug Report*, ARQ

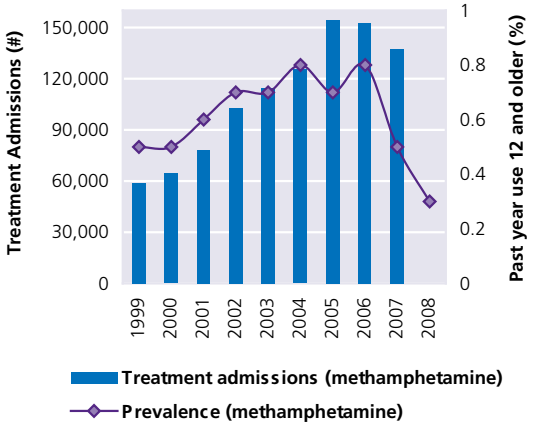


and Central European countries which had remained stable since 2003.

The expert perceptions in the developed countries show a stabilization or decline in 'ecstasy' use since 2004. This is also supported by the results of household surveys in these markets. Australia has reported relative stability, albeit at comparably high levels, in past year use by the general population since 2004 while declines have been reported for Spain, the United Kingdom (England and Wales) and the United States.

Fig. 73: United States: Past year use of methamphetamine and treatment demand, 1999-2008

Sources: Substance Abuse and Mental Health Services Administration, Office of Applied Studies, *Treatment Episode Data Set (TEDS) Highlights - 2007 National Admissions to Substance Abuse Treatment Services*, Rockville, Maryland, 2009



11 Refer to footnote 5.

ATS problem drug use represents the only class of drug use in the past decade which has increased significantly in every region of the world. Although the patterns of ATS use with respect to the specific drug type and its form vary significantly across regions, unweighted treatment demand increased from between 2 (Africa) and 11 (North America) percentage points in the past decade. While improvements may have been noted in the annual prevalence rates among the general population in several developed countries, problem drug use as reflected in treatment admissions can remain high. For example, treatment demand for methamphetamine use in the United States declined only slightly in 2007 while annual prevalence rates showed a marked decline since 2006.

Amounts of amphetamine-type stimulants available for consumption

Exactly how much ATS is illicitly manufactured is for the moment impossible to directly ascertain because independent calculations based on remote sensing of manufacture cannot be done, as is the case with poppy plants and coca bushes.[12] Simple counts of clandestine laboratories dismantled annually fail to include standardized measures of manufacture type or capacity inter alia the frequency of production cycles, amount of output, purity levels, time in operation, thus limiting their overall analytical value. Additionally, it is not known how many laboratories exist for each laboratory discovered.

Nonetheless, there is value in trying to assess the orders

12 Previous UNODC models estimated manufacture based on the triangulation of consumption, seized end product, and seized precursor chemicals. However, changes in the drug market, particularly related to the precursor chemical seizures, and ability to ascertain seizure rates made this model less useful.

Table 11: Estimate of illicit amphetamine-group substances manufactured in 2008 (mt)

Source: UNODC calculation

	Amphetamines-group (retail purity)		Amphetamines-group (wholesale purity)	
	low estimate	high estimate	Low Estimate	High Estimate
Annual consumers (estimated 2008)	13,710,000	52,900,000	13,710,000	52,900,000
Average consumption (pure grams/year)	10.9	10.9	10.9	10.9
Metric tons estimated Consumed (pure)	149	577	149	577
Metric tons reported seized	47.4	47.4	47.4	47.4
Metric tons manufactured (unadjusted for purity)	197	624	197	624
Purity (weighted)	24%	24%	36%	36%
Metric tons seized (adjusted to pure)	11.4	11.4	17.2	17.2
Metric tons manufactured (pure)	161	588	167	594

of magnitude of the potential amounts of ATS available for consumption at the global level, which can also serve as a proxy or tentative result for the calculation of overall manufacture levels. Some studies have assessed actual consumption of amphetamine, methamphetamine and ecstasy, though mostly limited to a few developed countries.[13] Several studies assessed consumption as a product of the number of users in a given period, the frequency of drug use over that period and the amount used per typical episode; others indicated what the total consumption of drugs may be in a given year, while others calculated what chronic and occasional/recreational users may consume in a year.

Based on these studies, the orders of magnitude of the global amount consumed can be estimated, assuming that the values from these studies:

1. accurately represent the 'typical user',
2. can be generalized to other countries, particularly developing countries, and that
3. the epidemiology of drug patterns from the estimates is representative.[14]

Taking the studies and assumptions mentioned above into consideration, the average past year amphetamine-group substance user (that is, from the casual to problem user) may consume an estimated average of 10.9 g of pure substance[15] per year. The average past year ecstasy user may consume an estimated 5.1 g of pure MDMA (or analogue) per year, the equivalent of approximately two tablets at 50 mg per week. Multiplying these per capita use estimates by the range of past year users of amphetamine-group substances and ecstasy-group substances in 2008 provides for an order of magnitude of the amounts consumed.

Assuming that drugs seized in 2008 would have been consumed in 2008, or assuming that there was no significant change in the amounts of ATS stockpiled (if any), the amounts consumed plus (purity-adjusted)[16]

13 Office of National Drug Control Policy, *What America's Users Spend on Illicit Drugs, 1988-2000*, Washington, DC., 2001; Bramley-Harker, E., *Sizing the UK Market for Illicit Drugs* (RDS Occasional Paper. No. 74), London, Home Office, 2001.; Wilkins C., Reilly J., Rose E., Roy D., Pledger M. and Lee A., *The Socio-Economic Impact of Amphetamine Type Stimulants in New Zealand: Final Report*, Centre for Social and Health Outcomes Research and Evaluation, Massey University, Auckland, September 2004; Netherlands Scientific Research and Documentation Centre, Ministry of Justice meeting with UNODC, February 2004; Singleton, N., Murray, R. and Tinsley, L. (Eds), *Measuring Different Aspects of Problem Drug Use: Methodological Developments* (Online Report 16/06), London: Home Office.; Eisenbach-Stangl, I., Moskalewicz, J., Thom, B. (Eds), *Two Worlds of Drug Consumption in Late Modern Societies*, Farnham (UK), Ashgate, 2009.

14 Clearly drug epidemiology is ever changing—some countries have newly emerging markets for various ATS with fewer chronic drug users while others have more mature markets, where fewer new incidents may be occurring but where a larger number of problem drug users may exist.

15 There were three estimates for methamphetamine users at between 16.1 and 22.8 pure grams consumed per year (average 19.3), while nine estimates for amphetamine (includes one amphetamine and methamphetamine combined estimate) had consumer using between 1.6 and 35.8 grams of amphetamine per year (average 8.1). There were 11 estimates for typical ecstasy users. Estimates were for data between 1999 and 2008/2009 with the median estimate from users in 2005.

16 Adjustment was weighted based on reported purities of both retail and wholesale levels for a given country. When a country failed to report purities the unweighted regional average for either market was substituted. In cases where a country reports both low purity methamphetamine (for example tablets) and high purity crystalline

seizures provide for a proxy of the total ATS manufactured in 2008.[17]

Amphetamine-group substances available for consumption in 2008

The amounts of amphetamine-group substances potentially manufactured (with seizures unadjusted for purity) are estimated between 197 and 624 mt, or taking purity-adjusted seizures into account, between 161 and 594 mt. The range is larger than was reported in 2007 because the uncertainty in the annual prevalence increased as a number of older estimates (>10 years) were no longer considered to be reliable estimates for the current ATS use situation. If one assumes that the majority of seizures reported to UNODC best represents retail market level seizures at 24% purity,[18] the production range would decline slightly (161 to 588 mt), due to the removal of adulterants and diluents.[19] If reported seizures better represented the wholesale market (36% purity), the range would amount to between 167 and 594 mt. A significant amount of the difference between bulk and purity adjusted seizures are inter alia the massive amounts of seized tablets sold as Captagon in the Near and Middle East, which recent forensic analyses suggested to have an average amphetamine content between 1% and 16%.

Given the estimates from above and the amount of drugs seized, one can derive estimates of the amphetamine-group substances interdicted in orders of magnitude.[20] There were 47.4 mt of bulk amphetamine-group substances reported seized in 2008, which, adjusted for purity at the retail and wholesale levels, is between 11.4 and 17.2 mt, respectively. Assuming all of the drugs seized were interdicted from the retail market, estimates would range from 2% (11.4/588) to 7% (11.4/161). If the amounts seized were from the wholesale market, the estimated range would be between 3% and 10%. Such orders of magnitude would be also in line with a few other published rates.[21]

methamphetamine, the purity was based on a weighted average (from seizure data). The reported seizures of 'non-specified amphetamines' were assumed to be either amphetamine or methamphetamine, and thus were given an average weighted purity of amphetamine and methamphetamine, based on total seizures.

17 This does not account for other forms of loss, such as discarding drug to avoid capture or spoilage which are assumed to be minimal.

18 Purity data are typically based on seizures which may not be representative of all drugs in the market, and given the various methods in sampling and forensic reporting (for example, as a drug base versus a salt) can impact purity estimates.

19 Unfortunately only total seizure weight by drug is reported, and not the distribution of seizure weights. Therefore, it is not possible to assign whether seizures best represented street or wholesale transaction amounts.

20 Annual drug seizures of drugs considerably greatly from year to year which impact the rates calculated.

21 Individual interception rates fluctuate considerably over time, place and drug type. New Zealand (2001) amphetamines-group interceptions were found to be between 2% and 7% of totals for consumption. Centre for Social and Health Outcomes Research and Evaluation, *The Socio-Economic Impact of Amphetamine Type Stimulants in New Zealand*, Auckland, New Zealand (2004). However, those figures changed notably in the following year.

22 *World Drug Report 2009* (United Nations publication Sales No. E.09.XI.12).

In contrast to the apparently low interdiction rates for ATS, the calculated interception rates for purity-adjusted cocaine have been exceeding 40% in recent years, and are around 20% for the opiates.[22] There are several reasons which lend support to the findings of far lower interception rates for the ATS as compared to cocaine and opiates. First, the source of most of the world's cocaine and opiates are restricted to just three specific regions: parts of South America (Colombia, Peru and the Plurinational States of Bolivia), Afghanistan, and the so-called 'Golden Triangle' (mainly Myanmar). Contrast that with the number of reported ATS manufacture locations which are spreading and shifting throughout the world. Second, since manufacture of ATS typically occurs close to their consumer markets they cross far fewer borders than either cocaine or opiates, and thus have significantly less chance of being detected, Next, large-scale manufacture locations—such as in East and South-East Asia—have porous borders and thousands of kilometres of unpatrolled coastline, making transfer of products into neighbouring countries a comparatively low risk activity. Lastly, ATS awareness remains low as governments in many regions continue to remain focused on the 'traditional drugs'—namely cocaine and heroin.

Ecstasy-group substances available for consumption in 2008

Ecstasy-group substances consumed were estimated between 53 and 132 mt in 2008. Adding seizures (and assuming no significant changes in the stocks) would give an estimate of between 57 and 136 mt, or adjusting for purity from 55 to 133 mt. The low end estimate is somewhat lower than in 2007 because the uncertainty in the estimated number of annual users increased. The high end estimate of ecstasy-group substances manufactured remained largely unchanged because far less was reported seized in 2008 than it 2007.

There were a total of 3.9 mt of ecstasy-group substances seized (unadjusted for purity), which, depending on the estimates, gives an interdiction rate ranging from 3% to 7%.

Adjusting the seizures for purity lowers the calculated interdiction rates to between 1% and 3%. Such unusually low rates—even lower than for the amphetamine-group substances—seems counter intuitive, as the countries known to be significant ecstasy manufactures,

Table 12: Estimate of illicit ecstasy-group substances manufactured in 2008 (mt)

Source: UNODC calculation

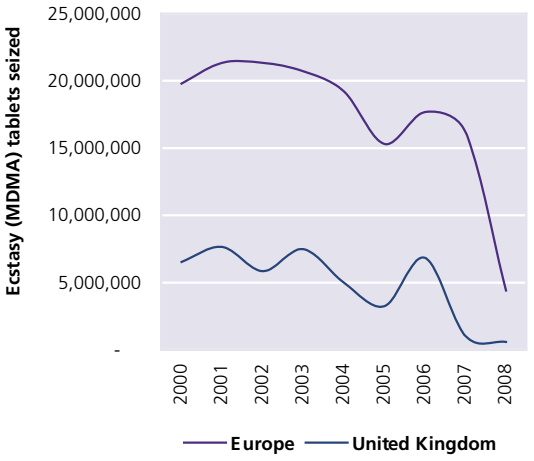
	Ecstasy-group (retail purity)		Ecstasy-group (wholesale purity)	
	low estimate	high estimate	low estimate	high estimate
Annual consumers (estimated 2008)	10,450,000	25,820,000	10,450,000	25,820,000
Average consumption (pure grams/year)	5.1	5.1	5.1	5.1
Metric tons estimated consumed (pure)	53	132	53	132
Metric tons reported seized	3.9	3.9	3.9	3.9
Metric tons manufactured (unadjusted for purity)	57	136	57	136
Purity (weighted)	36%	36%	45%	45%
Metric tons seized (adjusted to pure)	1.4	1.4	1.7	1.7
Metric tons manufactured (pure)	55	133	55	133

while spreading, remain more limited in number than for other ATS. In fact, only 10 countries reported having dismantled clandestine MDMA laboratories in 2008. Several of these countries have law enforcement personnel that are well trained in detecting this type of substance. Additionally, because of fewer locations, 'ecstasy' is likely to be trafficked across more borders when compared to other ATS like methamphetamine. Therefore, what could explain such extremely low interception rates?

The answer may lie in the fact that 'ecstasy' estimates assume the consumption of pure MDMA (or its analogues), drugs under international control. However, the 'ecstasy' market is undergoing significant transformations particularly in Europe. Since about 2007 the amount of 'ecstasy' (MDMA) tablets available in Europe and the United Kingdom—one of the largest markets—has been declining while tablets sold as 'ecstasy' increasingly contained greater proportions of substitute psychoactive substances not under international control, such as various piperazines like BZP, *m*CPP and TFMPP.[23] For example, in 2006 only 10% of tablets sold as 'ecstasy' in the EU contained *m*CPP, but by the end of 2008 it was as high as 50% in some large-market countries.[24] In other words, the model reflects what people consider to be 'ecstasy', while the actual number of MDMA users and the amount of MDMA consumed are likely to be lower than the number of 'ecstasy users' or the amounts of 'ecstasy' consumed. This leads to—statistically—very low interdiction estimates which may be misleading as they are based on a comparison of apples and oranges. Additionally, MDMA purity levels (retail or wholesale) typically represent the tablet market and not the powder market—which in Europe is roughly a third of reported seizures—and which has been associated with higher purity. Against this background, the seizure figures *unadjusted for purity*, resulting in interdiction rates ranging from 3% to 7%, are probably a far better reflection of actual interdiction successes in the ecstasy market than the figures based on purity adjusted data.

Fig. 74: Ecstasy (MDMA) tablets reported seized in Europe, 2000-2008

Source: UNODC ARQ



23 1-Benzylpiperazine, 1-(3-chlorophenyl)piperazine, and 1-(3-Trifluoromethylphenyl) piperazine.

24 EMCDDA, BZP and other piperazines. *(see http://www.emcdda.europa.eu/publications/drug-profiles/bzp)*, retrieved 8 April 2010.

Unfortunately, despite the efforts of some governments to improve the capacity to generate reliable data, the quality and timeliness of available data from which these estimates are derived are unlikely to improve in the very near future. This, coupled with the model's assumptions, suggests that the interdiction rates, derived from the tentative manufacture estimates and seizures, are not yet robust enough to be an effective indicator of annual market change, only its magnitude.

1.4.4 Key ATS issues

The significant growth seen in the ATS market over the past decade has been fueled by increased involvement by criminal organizations. Criminal groups have the ability to respond to market pressures on a corporate level. They are able to quickly retool manufacturing processes, develop new products, source new precursor chemicals and disguise their intentions by using complex supply routes for sourcing the required chemicals. Industrial-sized operations with production cycles in the hundreds and now thousands of kilograms dictate the involvement of organized crime, and have become more commonplace among developing countries with examples in Fiji, Guinea, Indonesia, Malaysia, Mexico and the Philippines, among others. Since manufacture often occurs in the consumer country or adjacent country, tracing trafficking flows of these drugs across regions—given the orders of magnitude of interception rates for various ATS—are far less meaningful than for either cocaine or heroin. Instead the dynamics of the market growth is better illustrated by developments in illicit manufacture seen by increases in laboratory size, sophistication, yield, precursor chemical types and sources, and the shifting location of operations into more vulnerable countries.

The importance of precursor control

Precursor chemicals are to ATS what opium is to heroin. These fundamental building blocks are diverted from legitimate trade into illicit manufacture. The United Nations 1988 Convention against the Illicit Traffic in Narcotic Drugs and Psychotropic Substances provides for measures to prevent diversion of key precursor chemicals for purposes of illicit drug manufacture.[25] In their bid to obtain these chemicals, criminal organizations have become increasingly innovative in circumventing these controls, and as such, many countries have also enacted progressively stronger domestic controls to stem their flow into illicit manufacture. Inter alia as precursors become more difficult and expensive to obtain, manufacturing costs to illicit operators increase which leads to a variety and combination of events, such as:

1. manufacture drops and the price and purity (that is, value) of the drug decreases,
2. the source(s) and/or supply routes of precursor chemicals change(s),
3. the precursor chemical itself (form or type) and/or manufacturing process changes,
4. the location of manufacture shifts to more vulnerable lower cost areas, and/or
5. substitute psychoactive substances may appear.

The degree to which controls are able to stem the flow of the requisite chemicals dictates the degree to which these events may occur. How long the effect lasts depends on the criminal's ability to circumvent these controls. The impact of regulatory controls on manufacturing dynamics is best illustrated with recent events in the largest ATS markets of North America, Europe and Asia.

North America: Relocation of methamphetamine manufacture to neighboring regions

Significant methamphetamine manufacture based in the United States of America relocated into neighbouring Mexico after stricter controls over precursor chemicals were enacted in the United States. The United States' methamphetamine market, the largest in North America, is predominantly supplied from Mexican-based criminal groups and to a lesser degree from domestic manufacture. The implementation in the United States over the last 20 years of progressively stricter domestic controls over bulk precursor chemicals, primarily pseudoephedrine and ephedrine, initially resulted in decreases in the purity of the methamphetamine.[26] As illicit manufacturers began to identify over-the-counter pharmaceutical preparations containing pseudoephedrine (that is, cold medicine) as a new unrestricted source of chemicals, the number of domestic laboratories, and users, increased. In 2005, national controls for pharmaceutical preparations were enacted in the United States and resulted in a sharp decline in the vast numbers of small to medium-size laboratories, although production loss was offset by increasing large-scale manufacture in neighbouring Mexico. The number, size and sophistication of laboratories in Mexico increased dramatically since then, as did the amount of methamphetamine trafficked back into the US.[27] For example, in August 2009, Mexico dismantled the largest industrial–scale laboratory involving the seizure of a manufacturing complex

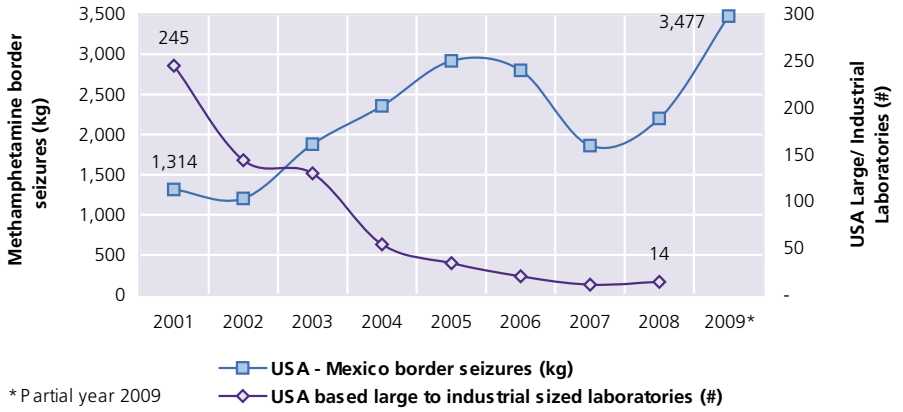
25 As of 31 October 2009, the Convention had been ratified, acceded to or approved by 183 UN Member States.

26 Cunningham, J. K., Liu L., and Callaghan, R., "Impact of US and Canadian precursor regulation on methamphetamine purity in the United States," *Addiction*, 104 (4), pp. 441–453, 2009.

27 US Department of Justice, *National Drug Threat Assessment 2010*, National Drug Intelligence Center.

Fig. 75: United States seizures of methamphetamine reported near the Mexico border versus seizures of large-scale USA-based clandestine methamphetamine laboratories, 2001-2009*

Source: *National Drug Threat Assessment 2010* (and previous years). US Department of Justice, National Drug Intelligence Center



* Partial year 2009

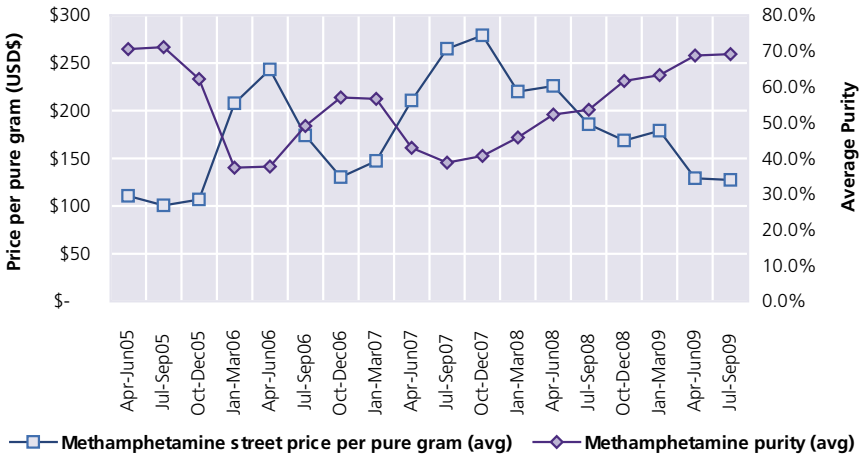
with more than 31,000 litres of chemicals in the 22 building complex spread over 240 hectares.[28]

Import restrictions on pseudoephedrine and ephedrine in Mexico to address the shift in the market dramatically cut manufacturing levels in that country in 2007. Mexico embarked on a campaign against organized crime groups involved in manufacturing of methamphetamine by inter alia reducing domestic diversions of precursors through the reduction of legitimate imports of ephedrine and pseudoephedrine, and ultimately banning the import, export of and trade in the substances by mid-2008. Manufacture dropped and seizures from Mexico into the United States subsequently declined nearly 40% in 2007/2008 from their peak in 2005/2006.

The decline in illicit manufacture of methamphetamine, first in the United States and then in Mexico, impacted the street economics; resulting in an increase in price and a decrease in purity. Methamphetamine price and purity data from the United States confirm that as domestic controls over precursors in the form of pharmaceutical preparations were strengthened, the price per

Fig. 76: Change in street price and purity of methamphetamine in the United States, 2005-2009

Source: *National Drug Threat Assessment 2009 and 2010*, US Department of Justice, National Drug Intelligence Center



28 La Secretaría de la Defensa Nacional informa de la localización de un complejo para el procesamiento de drogas sintéticas y mariguana, constituido con 22 instalaciones ubicadas en un terreno de 240 hectáreas, Secretaría de la Defensa Nacional (SEDENA), 7 August 2009. *Global SMART Update 2010*, vol. 3, March 2010.

Map 10: Routes from notable ephedrine/pseudoephedrine precursor diversion cases, 2006/2007 and 2008/2009

Sources: INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances* (2009 and previous years), Individual Drug Seizures Database and other government sources

Other government sources include: ACC (2009), DEA-ODC (2008), INSCR (2010), NDIB (2009), RCMP (2009 and previous years) and WCO (2009 and previous years)

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Lines represent origin and intended destination, not necessarily exact route, and include completed or stopped trafficking attempts. Modes of transit include by air, sea, overland, or any combination thereof.

pure gram nearly doubled from 2005 to 2006.[29] Cuts to legitimate imports of precursor chemicals in Mexico had a similar effect, again with the price per gram of pure methamphetamine nearly doubling in 2007, US$147 in the first quarter to US$279 in the final quarter. In both cases, the significant effect appeared to have lasted between six and nine months before manufacturers were able to retool operations and find new sources of chemicals to continue production. Since 2008, when manufacture in Mexico rebounded (and to a lesser degree the United States) the price per pure gram in the United States has been on the decline and was US$127 in the third quarter of 2009.

As both the United States and Mexico have tightened controls over the key precursors for methamphetamine both in bulk and in the form of preparations, new sources and supply routes of precursor chemicals have emerged quickly as organized crime groups exploit Latin America to maintain manufacturing operations throughout Mexico. By 2006/2007 precursor traffickers began obtaining and smuggling chemicals increasingly in the form of tableted pharmaceutical preparations from West Asia, Africa, and via Europe into Mexico. Many of these shipments were identified and subsequently stopped as a result of consistent utilization of existing precursor control mechanisms (namely online pre-export notification systems) and back-tracking investigations of suspicious shipments by law enforcement. However, new routes again emerged in 2008/2009 throughout Central and South America, and new significant sources of diversion were identified, such as Bangladesh.[30] Thus, criminals increasingly target countries with weak or non-existent precursor awareness and/or domestic control mechanisms and exploit loopholes within the existing international control mechanisms.

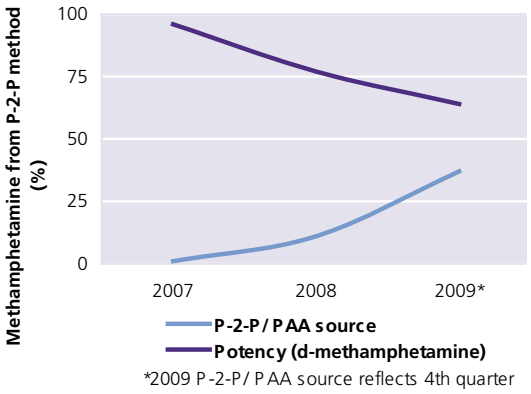
Criminals also continue to circumvent the control mechanisms by changing manufacturing processes to use chemicals with less strict or no international or domestic controls, or they manufacture controlled chemicals from non-controlled pre-precursors. During 2007, manufacturing processes in Mexico began to increasingly rely upon alternative manufacturing formulas starting from phenylacetic acid (PAA) and its derivatives to manufacture phenyl-2-propanone (P-2-P). In 2007, only 1% of seized methamphetamine was derived from the P-2-P method. However, by the end of 2009, it

29 The United States, with its Drug Enforcement Administration's (DEA) *System to Retrieve Information from Drug Evidence* (STRIDE), is the only country with a detailed administrative data system which includes information on drug transactions (undercover purchases, sales and seizures) in operation since the early 1980s.

30 INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2009 (United Nations publication Sales No. E.10.XI.4), and previous years.

Fig. 77: Changes in methamphetamine manufacturing methods in Mexico, 2007-2009

Source: US DEA Special Testing Laboratory



*2009 P-2-P/PAA source reflects 4th quarter

had become more prominent with 37% of methamphetamine assumed to have been produced using this method.[31] During that same period there was also a decrease in the quantities of the more potent *d*-methamphetamine entering the United States as a result of greater reliance upon the P-2-P method.[32] Since October 2009, Mexico has reported seizing nearly 120 mt of phenylacetic acid (PAA) derivatives, which are not internationally controlled. These alone could produce up to 30 mt of methamphetamine, which is almost twice the global methamphetamine seizures reported in 2008.[33] PAA is under international control as a Table II substance with far fewer controls than other methamphetamine precursors. It was only in March 2010 that the Commission on Narcotic Drugs (CND) decided to transfer PAA to the same level of control as the other methamphetamine precursor chemicals P-2-P, ephedrine and pseudoephedrine.[34] While PAA derivatives continue to remain outside the international control regime, allowing for unfettered international trade, the Government of Mexico strengthened domestic controls and surveillance over the use and import of PAA salts and derivatives in November 2009.

At the same time there are now indications that significant manufacture is yet again shifting further south. In February 2010, Nicaraguan National Police reported the seizure of its first large-scale clandestine methamphetamine laboratory which police estimated had a production capacity of around 70 kg.[35] This is reportedly the third laboratory discovered in the country but unprecedented size. Manufacture-related activities have also been reported from Guatemala and Honduras and significant precursor chemical seizures are already being reported throughout the region, even though law enforcement and regulatory attention there continues to focus primarily on the cocaine trade.

There is currently little likelihood of methamphetamine substitutes appearing for methamphetamine on the US market, as has been observed with other ATS in Europe and parts of Asia. Manufacture in the United States shows its first signs of rebounding since 2005 with a 26% increase in laboratory incidents reported in 2009 over 2008. Greater amounts of high potency domestically produced methamphetamine will likely complement the somewhat less potent methamphetamine flowing from Mexico. Additionally, there may be increased flow of derivatives of PAA trafficked via Central American countries for use in retooled production operations in Mexico, as manufacturers attempt to circumvent new restrictions enacted by the Government.

Europe: The changing nature of MDMA manufacture

Organized crime groups in Europe, particularly in the Netherlands and Belgium, have long been considered a major global source of ecstasy (MDMA or its analogues).[36] Although ecstasy from Europe is still dominant on the global market, fewer countries identify Europe as the source for ecstasy seen in their markets. While more than 80% of all ARQ reporting countries have identified Europe as the source of their seized ecstasy in 2002, this share has been declining since 2004 to 73% in 2009, as a greater proportion of countries outside of Europe began reporting that the sources of their ecstasy were places other than Europe. This coincided with disruptions to precursor chemical supplies in Europe and emergence of MDMA manufacture in other locations closer to non-European consumer markets. At the same time, European countries continue to report that their seized ecstasy is sourced from within Europe.

There have been no seizures of 3,4-MDP-2-P (PMK), the most common MDMA precursor chemical used in Europe, since 2007, but there are indications that manufacturers are retooling operations to make use of alterna-

31 Extraction of Methamphetamine Precursor Material from Medicinal Preparations and Methamphetamine Profiling Results, presented by the DEA Special Testing and Research Laboratory at the forty-fifth regular session of the Inter-American Drug Abuse Control Commission (May 2009); US Department of Justice Drug Enforcement Administration, Special Testing and Research Laboratory (Jan 2010)

32 Pseudoephedrine and ephedrine result in the more potent central nervous stimulant d-methamphetamine while P-2-P methods result in the less potent racemic d,l-methamphetamine, unless separated in an additional synthesis step.

33 Secretaría de Seguridad Pública (SSP) México, Boletín de Prensa/189 México, D.F., 8 de abril de 2010. *Global SMART Update 2010,* vol. 3, March 2010.

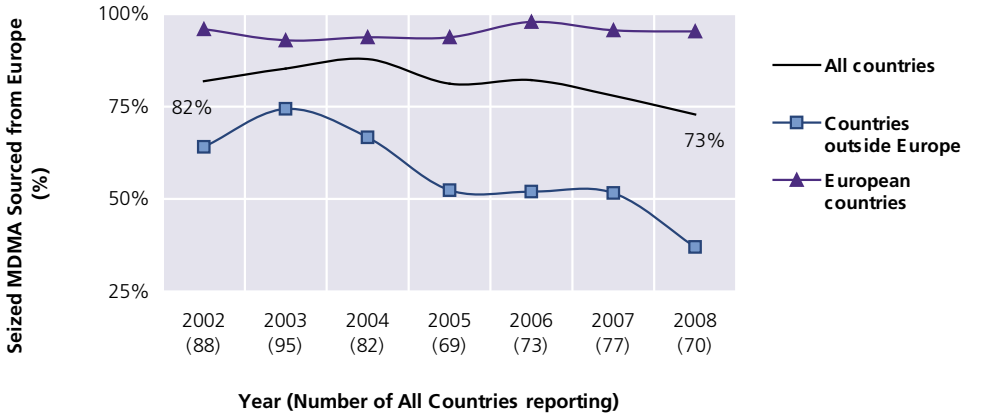
34 Member States have now six months to implement the increased control measures.

35 Policía Nacional de Nicaragua, *Policía detecta laboratorio de Anfetaminas*, 23 February 2010.

36 *Europol Organized Crime Threat Assessment*, 2009, European Police Office, The Hague.

Fig. 78: Europe as the source of seized ecstasy-group substances as mentioned by Member States, 2002-2008

Source: UNODC ARQ/DELTA.

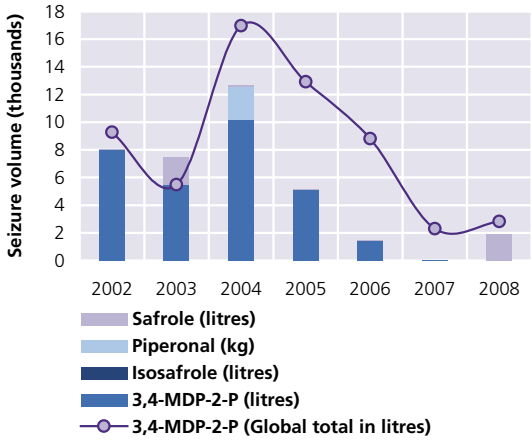


tive chemicals. Europe used to account for the majority of reported global 3,4-MDP-2-P seizures. However since 2004, there has been a decline in the amount of reported seizures of 3,4-MDP-2-P with the last reports in Europe occurring in 2007.[37] The likely reasons for the significant shortages may include: an increased demand for this precursor chemical in MDMA manufacture in other parts of the world, increased law enforcement strategies to curtail manufacture, including controlling the availability of key specialized equipment such as pill presses, and significant regulatory efforts to prevent illegitimate imports or diversions of precursor chemicals via more consistent utilization of pre-export notifications. In addition, China, traditionally the source of 3,4-MDP-2-P, entered into a new agreement with the European Union in 2009 to improve precursor controls and coordination. The country also announced tighter controls on the manufacture of 3,4-MDP-2-P. Taken together, this suggests that the trend towards retooling ecstasy manufacture in Europe will continue.[38]

In fact, criminals are already turning to alternative sources to manufacture MDMA to meet the demand in Europe. In 2008, 1,900 litres of safrole-rich oils (SRO) were reported seized in Europe, the first such seizure of any magnitude since 2003. Safrole-rich oils are typically sourced from South-East Asia. In 2006, there were an estimated 1,360-1,620 mt of SRO produced in East and South-East Asia, much of it for legitimate industry.[39] In February 2009, the Government of Cambodia disposed of almost 15 mt of safrole-rich oils with an additional 5.2 mt seized in June 2009, while 45 mt of safrole was reported seized by Thailand in 2007. Given the significant volume of safrole-rich oils available, there is a high likelihood that illicit manufacturers will turn to using SRO. It is important to note that SRO-based operations are already being reported by countries in Europe and around the world.[40]

Fig. 79: Seizures (in mt) of ecstasy-group precursor chemicals in Europe, 2002-2008

Source: INCB



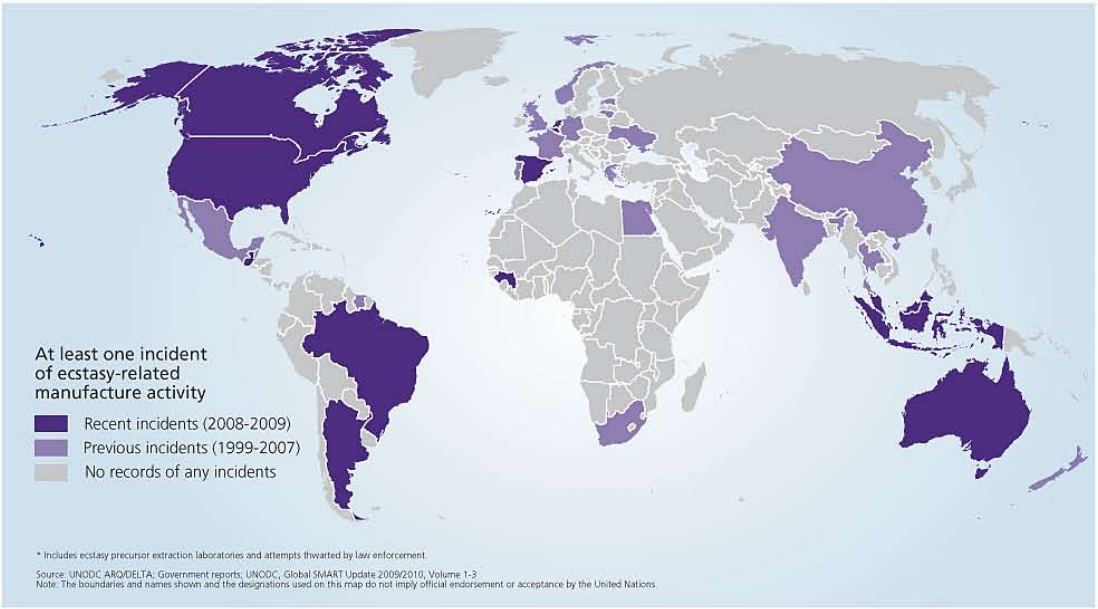
37 The activities of INCB's Project Prism and the PEN on-line system have focused on preventing the smuggling of both 3,4-MDP-2-P and P-2-P into the EU for use in the illicit manufacture of MDMA and amphetamine respectively. However, seizures have been noted in other countries, such as Canada.

38 China also announced tighter controls on the manufacture of ephedrine, P-2-P, and hydroxylamine hydrochloride (the precursor of ketamine).

39 UNODC, *Essential Oils Rich in Safrole, Survey of Production, Trade, and Use in East and South-East Asia*, 2006.

40 SYNDEC4, *Operation Counter Curse presentation by the DEA*, November 2009; *Two arrested and police uncover first ever clan lab used in manufacture of safrole oil precursor for MDMA*, New South Wales Police Media Release 28 January 2010.

Map 11: Ecstasy-related manufacture since 1999 and in 2008-2009



Until just a few years ago, MDMA manufacture on of large scale was uncommon outside of Europe. However, since 2003-2004, MDMA manufacturing operations have increasingly been encountered closer to the consumer markets in North America, South-East Asia and Oceania. There are now indications that manufacture is expanding into new regions such as Latin America with illicit manufacture having been reported in Argentina, Belize, Brazil, Guatemala, Mexico and Suriname. With its first small-scale laboratory seized in 2008, Brazilian authorities dismantled another larger and more sophisticated operation in 2009, which included the seizure of 30,000 tablets.[41] The first ever evidence of potential MDMA manufacture in West Africa was reported in 2009. Over 5,000 litres of SRO and 80 litres of 3,4-MDP-2-P, precursors for synthesizing MDMA, were found at multiple locations in Guinea in July 2009. These were enough to produce more than 18 million tablets (at 65 mg) of MDMA. While manufacture in Brazil appears limited, supplying the domestic market in the south of the country, there is little information to support local demand for ecstasy in West Africa, leaving Europe as the nearest significant export market.

Illicit manufacturers have been forced to substitute various other synthetic drugs, notably piperazines,[42] in tablets sold as 'ecstasy' to meet market demand in Europe. Almost half of the tablets seized or sold as 'ecstasy' in some EU Member States contained the piperazine *m*CPP alone or in combination with other psychoactive substances in the first half of 2009.[43] The increasing presence of piperazines in tablets sold as 'ecstasy' can be seen in both samples seized by law enforcement and also in those voluntarily surrendered by users beginning around 2006 but most notably in 2009. For example, the United Kingdom, whose tablet seizures account for roughly a quarter of the European market, showed marked declines in MDMA tablets seized and analysed by law enforcement. At the same time, the United Kingdom saw increases in tablets containing piperazines. Analysis of tablets sold as 'ecstasy' surrendered voluntarily by users in the Netherlands found similar trends with less MDMA and increasing proportions of other psychoactive substances. These, again, were due in large part to increases in various piperazines, a trend which continued into 2009.[44] In combination, piperazines can mimic the effects of MDMA.[45] However, users report that they are a poor substitute for high quality MDMA, with often unpleasant after-effects.

41 *Polícia Militar desativa laboratório do tráfico de drogas em Imaruí*, Polícia Militar de Santa Catarina, 4 August, 2008; *Global SMART Update 2009*, vol. 2, October 2009.

42 1-Benzylpiperazine (BZP), 1-(3-chlorophenyl)piperazine (*m*CPP), and 1-(3-Trifluoromethylphenyl) piperazine (TFMPP).

43 EMCDDA, BZP and other piperazines, (see http://www.emcdda.europa.eu/publications/drug-profiles/bzp), retrieved 8 April 2010.

44 SYNDEC4, presentation by EUROPOL, The Eye of the Storm. November 2009.

45 Thompson, I., Williams G., Aldington, S., Williams, M., Caldwell, B., Dickson, S., Lucas, N., MacDowall, J., Weatherall, M., Frew A., Robinson, G. and Beasley, R., *The benzylpiperazine (BZP) / trifluoromethylphenylpiperazine (TFMPP) and alcohol safety study*, Medical Research Institute of New Zealand, 2006.

Fig. 80: The composition of 'ecstasy' tablets seized in the United Kingdom, 2006-2009

Source: United Kingdom Forensic Science Services

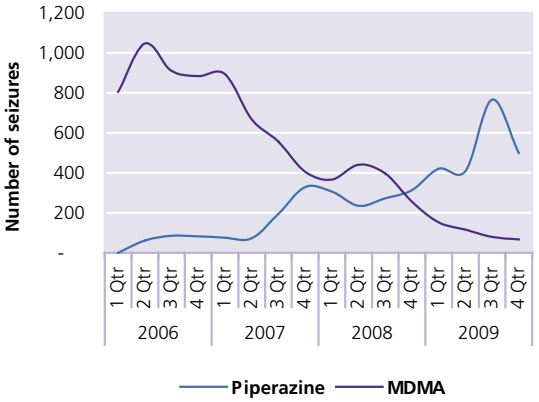


Fig. 82: Street price of European 'ecstasy' tablets, 2004-2008

*Weighted for population, currency and inflation-adjusted.
Source: UNODC ARQ

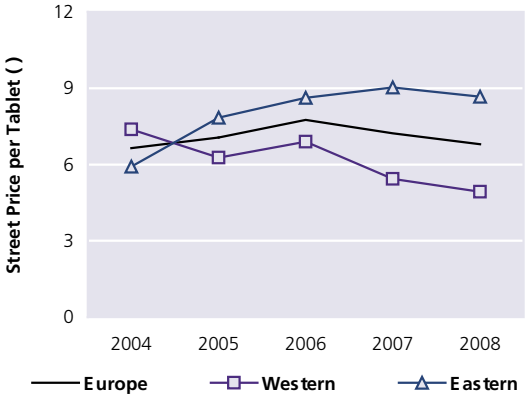
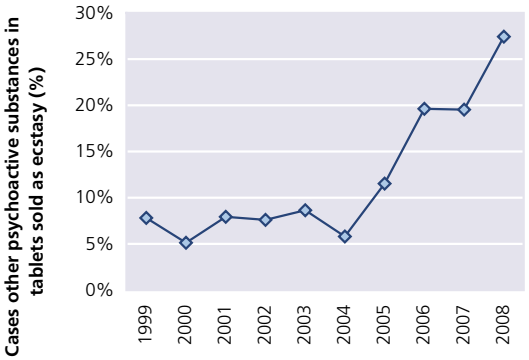


Fig. 81: Tablets sold as 'ecstasy' containing non-controlled psychoactive substances in the Netherlands, 1999-2008

Source: Vogels N., Brunt T.M., Rigter S., van Dijk P., Vervaeke H. and Niesink R.J., "Content of ecstasy in the Netherlands: 1993-2008," *Addiction* 104(12): 2057-66, 2009



The average street price for a tablet sold as 'ecstasy' in Europe does not appear to have increased, particularly in the larger West European markets,[46] as the piperazine-containing tablets command a similar street price in Europe as MDMA, roughly €4 per tablet. However, after controlling for varying purity, the price per pure gram of a tablet of MDMA may likely increase in 2009, even though the price per tablet may not.

Illicit manufactures exploit the lack of national and international controls over piperazines and other new synthetic substances to continue 'ecstasy' sales. Piperazines are not under international control,[47] and with the exception of BZP, most countries have limited or no national controls. In addition to piperazines, many new synthetic substances are also being sold as or in the 'ecstasy' market.[48]

One of those, methyl-methcathinone (mephedrone), has been related to major headlines in European news, because of its association with fatalities. Given their legal status, their street sale at a similar price as MDMA would command significantly higher profit margins, provide little chance of criminal sanctions, and likely expand the 'ecstasy' user market.[49] It is also important to note that the toxicity in humans of the majority of these new substitutes has never been assessed.

Until European demand for MDMA can be met by MDMA imported from other manufacturing locations, alternative MDMA precursor chemicals such as safrole can be adequately sourced, or the traditional MDMA precursor (3,4-MDP-2-P) can be obtained from alternative sources, the trend in end-product substitution can be expected to continue into the foreseeable future.

46 Estimated street price based on Member State responses for ecstasy (MDMA) tablets, weighted by population and adjusted for currency fluctuation and inflation. In cases where a price range was given, the mid-point was substituted.

47 Note though, that several piperazines have been proposed for critical review by WHO, the first step towards international controls.

48 The appearance of synthetic cannabinoid-like substances is not subject of this report as they are more related to the cannabis market. However, the same considerations for legal status, profits and risks to users apply.

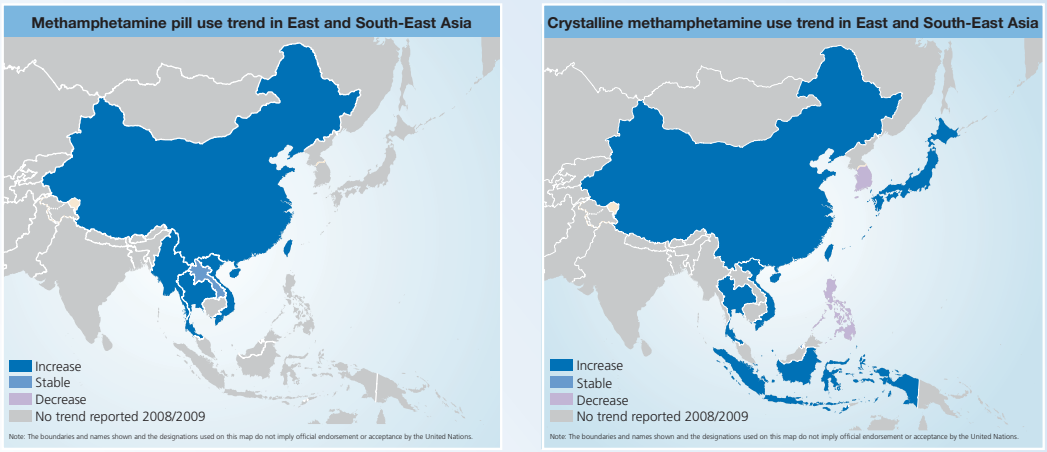
49 In 2006, legal piperazine party pills in New Zealand emerged as the fourth most widely tried drug type with twice as many people (aged 13-45) having tried legal party pills as the next most commonly tried drug, amphetamine. Wilkins C., et al., *Trends in drug use in the population in New Zealand: Findings from national household drug surveying in 1998, 2001, 2003 and 2006*, Centre for Social and Health Outcomes Research and Evaluation, Auckland, 2007.

More methamphetamine in East and South-East Asia

Indicators suggest increased availability and use of methamphetamine throughout East and South-East Asia. All countries in East and South-East Asia already report the use of methamphetamine with many reporting it as their primary drug of use, either in tablet form (yaba) or high purity crystalline form, with increasing use levels in 2008.[1] Increases in arrests and seizures also point to a significant growth in the availability of methamphetamine tablets on the market. Since 2004, methamphetamine arrests in Thailand— one of the largest consumer markets of tableted methamphetamine—have increased four-fold to 120,000 arrests in 2008, or 86% of the regional total. The number of tablets seized in Thailand also increased, jumping by more than 50% between 2007 and 2008 to 22 million tablets. Preliminary data suggest that further increases in the region are expected again for 2009.[2]

Fig. 83: Expert perception in the change in use of methamphetamine tablet or crystalline forms from 2007 to 2008

Source: UNODC, *Patterns and trends of amphetamine-type stimulants and other drugs in East and South-East Asia (and neighbouring regions) 2009*, November 2009



1 UNODC, *Patterns and trends of amphetamine-type stimulants and other drugs in East and South-East Asia (and neighbouring regions) 2009*, November 2009.

2 Ibid.

Asia: Vulnerable to illicit ATS manufacture

To limit the availability of precursor chemicals for illicit manufacture of synthetic drugs, there must be an international regulatory control system for the substance, it must be operationally used and enforced, and it should be coupled with domestic controls and fit-for-purpose cooperation mechanisms with relevant industries. There are several examples across Asia where the lack of controls have made countries vulnerable to attempts by criminals to obtain precursor chemicals for and/or establish illicit ATS manufacturing operations. The examples below illustrate the continuous flow of methamphetamine tablets from areas in Myanmar outside the central Government's control; the dramatically increasing use and availability of ketamine in parts of South-East Asia linked to the absence of international restrictions on the substance; and the unusually high annual legitimate requirements of key precursors in the Near and Middle East and South-West Asia, which may indicate potential for diversion of chemicals for illicit manufacture of methamphetamine and amphetamine (specifically in the form of Captagon)[50].

Myanmar: continuous flow of methamphetamine tablets from areas outside the central Government's control

Myanmar ranks fourth of the countries in East and South-East Asia that are most frequently cited as a source of methamphetamine (both crystalline methampheta-

50 Captagon was originally the trade name for a pharmaceutical preparation containing fenetylline, a synthetic stimulant. Today, most tablets seized as Captagon essentially contain amphetamine, typically in combination with caffeine and sometimes with a few other adulterants.

Fig. 84: Sources of seized methamphetamine (both crystalline and in tablet form) as mentioned by East and South-East Asian countries/territories, 2002-2008

Source: UNODC ARQ

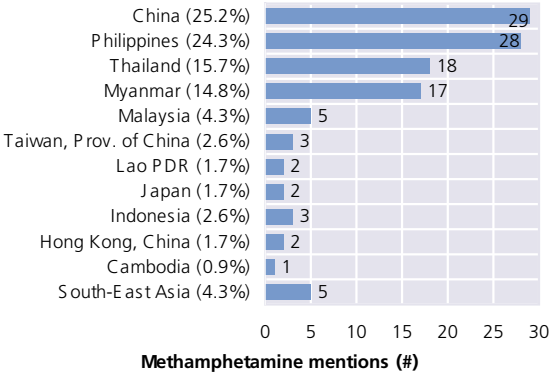
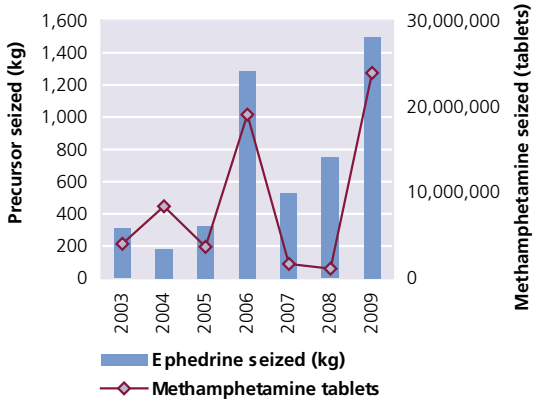


Fig. 85: Methamphetamine tablets and precursor seizures in Myanmar, 2003-2009

Source: INCB 2003-2009; Central Committee for Drug Abuse Control 2009



mine and methamphetamine tablets).[51] Of the countries traditionally associated with illicit methamphetamine tablets, Myanmar shares the top rank with Thailand.[52] Forensic data indicate that methamphetamine tablets come primarily from Myanmar's Shan State's various Special Regions near the eastern border with China and Thailand, which are under the control of armed ethnic groups operating outside the control of the central Government.[53] Because laboratories in these areas operate without fear of government forces, few significant seizures of precursor chemicals, ATS end-products or clandestine laboratories occur. For instance, between 1998 and 2009, the government reported seizing 39 'tableting' operations of which only two were reported to be of a 'large-scale'.[54] There are no reports of laboratories manufacturing methamphetamine powder (versus tableting laboratories). Similarly, of the 32 million tablets seized in East and South-East Asia in 2008, only about 3% (or 1.1 million) were reportedly seized in Myanmar. However the number of tablets and amount of precursor chemicals seized in Myanmar jumped in 2009, when, inter alia, the central Government entered by force parts of the North and Eastern Shan State not under their control.

Increasing amounts of precursors were seized in the form of tableted pharmaceutical preparations in 2009 which suggests that sourcing bulk precursor chemicals may have also become more difficult in Myanmar. Reports in 2009 identified the trafficking of preparations of ephedrine in liquid form with a seizure of 240 litres of ephedrine solution contained in more than 120,000 small nasal drop bottles, enough for about 5.5 million 30 mg methamphetamine tablets. The shift from bulk ephedrine to tableted and now liquid forms of pharmaceutical preparations containing ephedrine may be an indicator of a diversification of precursor supplies, a scenario which has also been reported in other countries with large-scale illicit drug manufacture.[55]

Ketamine in South-East Asia

Ketamine, while not under international control, is often found along with methamphetamine in tablets sold as 'ecstasy' and its use is an increasing concern in East and South-East Asia. There are also indications that it is starting to spread outside South-East Asia, reflected in the declining proportion of ketamine seizures in that region to 86% of global totals (8.2 mt or more than double global 'ecstasy' seizures) in 2008.

The growing use of ketamine is of particular concern in Hong Kong, China, as the demand for high quality MDMA ('ecstasy') appears to be decreasing. While the number of registered drug users for ecstasy-group substances has seen a 40% decline since 2004, the number of ketamine users has doubled.

Part of ketamine's growth in popularity has been its

51 Information based on 115 mentions of the source of seized methamphetamine (both crystalline and in tablet form). Mentions of Japan as a source country reflects the difficulty in identifying source countries and transiting countries. Japan has reported no clandestine manufacture to UNODC.

52 Note that Myanmar reports seizures of methamphetamine in the form of tablets, powder and in crystalline form.

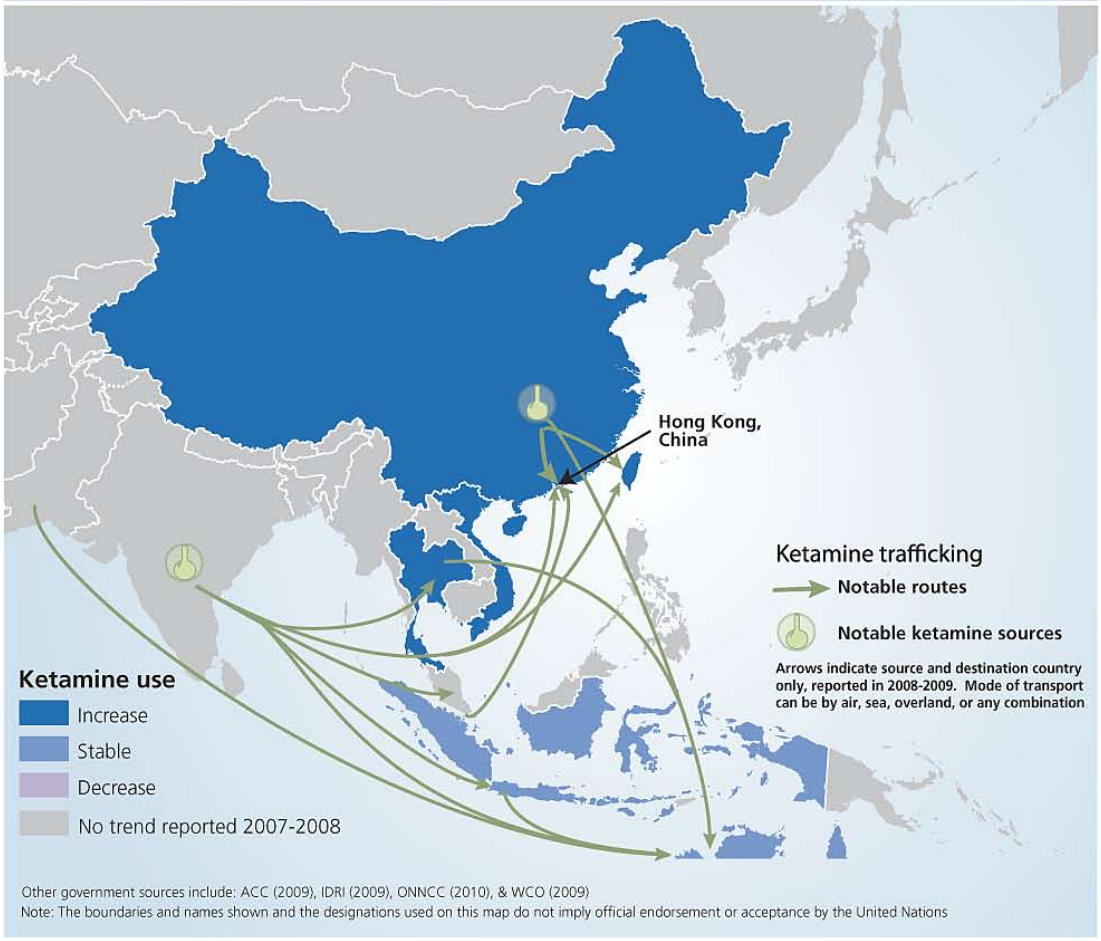
53 Primarily the north and east Shan State however illicit manufacture of methamphetamine is also reported to occur in the Wa and Kokang autonomous regions.

54 Myanmar, Central Committee for Drug Abuse Control.

55 In June 2009, authorities in Mexico seized 49,630 litres of a pharmaceutical solution containing pseudoephedrine. International Narcotics Control Board, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2009*, New York, 2010.

Map 12: Expert perception in the change in ketamine use and sources, 2007-2008

Sources: UNODC (2009), Patterns and Trends of Amphetamine-Type Stimulants and Other Drugs in East and South-East Asia (and neighbouring regions); DAINAP; Individual Drug Seizure Database and other government sources



Other government sources include: ACC (2009), IDRI (2009), ONNCC (2010), & WCO (2009)

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

Fig. 86: Global ketamine seizures and the proportion reported from South-East Asia, 2003-2008

Source: UNODC ARQ

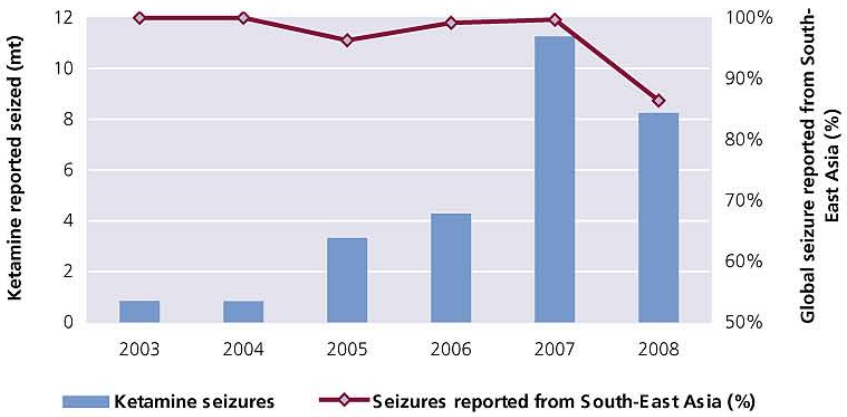


Fig. 87: Hong Kong, China: ketamine, methamphetamine and ecstasy-group drug registry cases, 1999-2008

Source: Central Registry of Drug Abuse, Narcotics Division (ND), Security Bureau, Hong Kong Special Administrative Region, China.

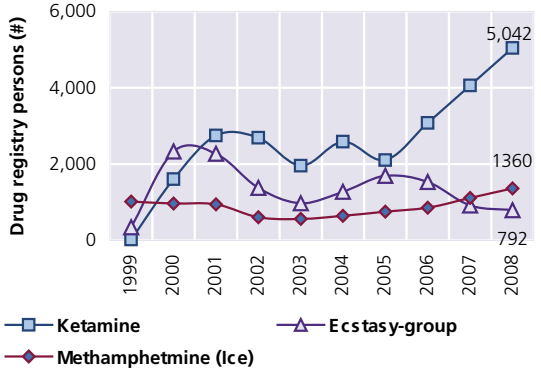
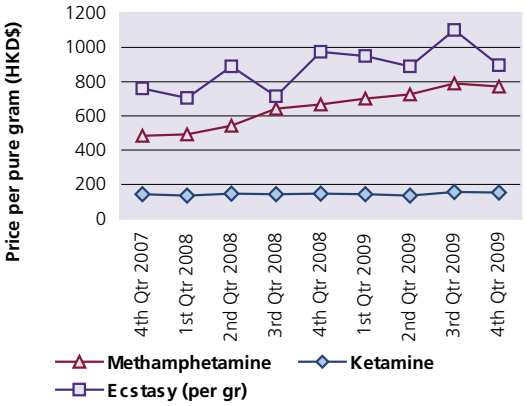


Fig. 88: Purity-adjusted quarterly street prices for various drugs sold in the ATS market in Hong Kong, China, 2007-2009

Source: Hong Kong Police Narcotic Bureau



continuously low price. For example, between 2007 and 2009, the average price per pure gram in Hong Kong, China was just HK$144, making it a cheap substitute for the increasingly expensive 'ecstasy' or methamphetamine.

Diversion from licit trade remains the primary source of ketamine with significant seizures being reported in various countries over the last couple of years. In December 2009, customs authorities in India seized a record 440 kg of ketamine en route to Malaysia.[56] However, industrial-scale illicit ketamine manufacture is also emerging. In 2009, China reported seizing two illicit laboratories processing hydroxylamine hydrochloride, the immediate precursor chemical for ketamine, and seizing 8.5 mt of this substance. In 2009, China announced tighter controls over the manufacture of hydroxylamine hydrochloride and other precursor chemicals.

Possible emerging locations for large-scale manufacture in parts of Asia

One of the most disturbing new ATS trends is the increase of methamphetamine in South-West Asia, a region already suffering from large-scale opium production and use. This specifically refers to the sudden and massive increase of reported seizures of high purity crystalline methamphetamine ('Shisheh") from the Islamic Republic of Iran which began in 2008. In 2008, the country also seized four clandestine methamphetamine laboratories—their first reports ever—and has since reported quickly decreasing street prices and an increase in methamphetamine use.[57] That manufacture outpaces domestic consumption is also reflected in the notable increase in 2009 in the frequency and extent of reported methamphetamine trafficking from Islamic Republic of Iran, with much of this destined for lucrative markets in East and South-East Asia.[58]

The starting material used in the illicit manufacture of methamphetamine in the Islamic Republic of Iran is most likely domestically diverted pseudoephedrine. Since 2006, the first year such reporting was required by the INCB[59], the Islamic Republic of Iran has reported notable increases in its annual legitimate requirement of the chemical. In just four years, the demand grew to give the Islamic Republic of Iran the fourth highest legitimate requirement in the world. Not only does this increase the likelihood of domestic diversion, but it also makes the country an attractive target for precursor diversion by transnational organized crime groups. That this may be more than a realistic concern is evidenced by recent reports of two stopped shipments of pseudoephedrine totaling 11 mt, both destined for Ethiopia.

An example of how rapidly increasing annual legitimate

56 DRI Chennai effects single largest ever seizure of 440 kgs. of ketamine worth RS. 44 crores at Tuticorin, Government of India, Ministry of Finance (Department of Revenue) Directorate of Revenue Intelligence, 25 December 2009.

57 DCHQ Deputy SG, *Prices of the synthetic drugs have dropped to one fourth*, 6 October 2009, Islamic Republic of Iran National Drug Headquarters; UNODC World Drug Report 2009

58 *737 kg of various drugs were found in airports this year*, Official Islamic Republic News Agency; *Global SMART Update 2009*, vol. 2, October 2009.

59 Countries provide INCB with annual estimates of their legitimate requirements for various ATS precursor chemicals to prevent their diversion into illicit manufacturing. In 2009, 91 countries reported their annual legitimate requirements for pseudoephedrine (bulk and preparations), 98 for ephedrine (bulk and preparations), and 15 for P-2-P. INCB, *Annual legitimate requirements reported by Governments for ephedrine, pseudoephedrine, 3,4-methylenedioxyphenyl-2-propanone, 1-phenyl-2-propanone and their preparations*, 2 March 2010 and past publications.

Fig. 89: Islamic Republic of Iran annual legitimate requirement of pseudoephedrine versus crystalline methamphetamine seizures, 2005-2009

Sources: ARQ/DELTA, INCB, Annual legitimate requirements reported by Governments for ephedrine, pseudoephedrine, 3,4-methylenedioxyphenyl-2-propanone, 1-phenyl-2-propanone and their preparations

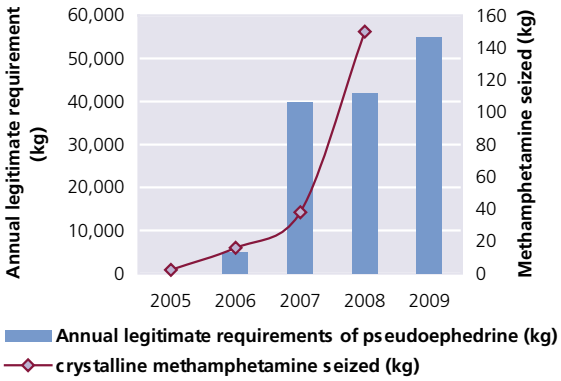
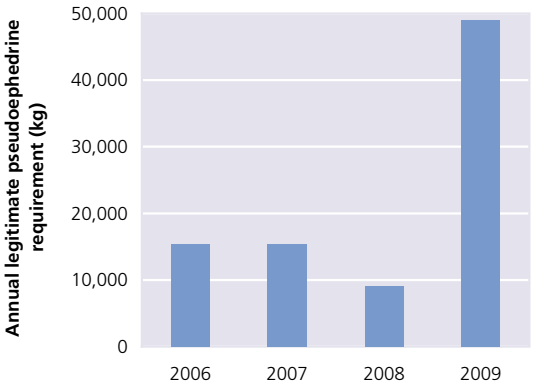


Fig. 90: Bangladesh annual legitimate requirement of pseudoephedrine, 2006-2009

Sources: INCB, Annual legitimate requirements reported by Governments for ephedrine, pseudoephedrine, 3,4-methylenedioxyphenyl-2-propanone, 1-phenyl-2-propanone and their preparations



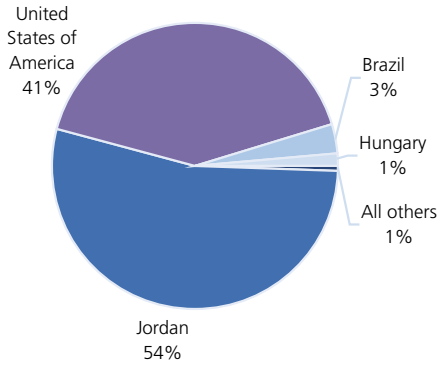
requirements can be an indicator for diversion into illicit manufacture can be seen in South-Asia. Since 2006, Bangladesh's annual legitimate requirement for pseudoephedrine has tripled, now making it the 6th highest in the world. In 2009, Bangladesh was first identified as a source country for tableted pharmaceutical preparations containing pseudoephedrine diverted into illicit drug manufacture with multi-million tablet shipments being seized in Central America, destined for Mexico. Bangladesh may also become a target for diversion of pseudoephedrine into neighboring Myanmar's illicit methamphetamine manufacture if pressure upon Myanmar's precursor supply continues.

A similar situation may also be occurring in the Near and Middle East, where the diversion of phenyl-2-propanone (P-2-P) may be fueling the region's expanding *Captagon* market. Jordan reported its annual legitimate requirement of P-2-P at 60,500 kg in 2009, accounting for more than half of the global total. The high legitimate need is based on the purported formulation of P-2-P into 'cleaning and disinfection' products. However the volume represents a significant risk of diversion into illicit *Captagon* manufacture, particularly as P-2-P is not an essential ingredient in the formulation of cleaning and disinfection products and alternative chemicals exist.

The most common way of obtaining requisite precursor chemicals and some of the common psychoactive substances substituting for controlled synthetic drugs, such as ketamine, is by their diversion from legitimate trade. The few examples highlighted herein illustrate that to be effective in preventing such diversions, governments must not only have functioning regulatory controls in

Fig. 91: Global annual legitimate requirement for P-2-P reported by Governments, 2009

Source: INCB, Annual legitimate requirements reported by Governments for ephedrine, pseudoephedrine, 3,4-methylenedioxyphenyl-2-propanone, 1-phenyl-2-propanone and their preparations



place, addressing both international and domestic trade, but that they must be vigilantly re-assessed for purpose.

1.4.5 Implications for response

The increasing size and complexity of illicit ATS operations encountered over the past 10 years point to increased involvement of criminal organizations, from the sourcing of precursor chemicals to the manufacture and trafficking of the ATS end-products. Yet, the intrinsic characteristics of ATS manufacture and trafficking, namely the independence from geographically defined source regions for raw materials and the geographic

closeness of manufacturing locations and consumer markets, limit the range and effectiveness of supply-side interventions when compared to heroin and cocaine.

The discussion above indicates that control of ATS precursors can be successful. In addition, evidence-based prevention and treatment have shown some cost-effective results.[60] Both measures work best when implemented in a holistic, comprehensive manner and when accompanied by the early identification of emerging developments.

The generation of a timely evidence-base is the only way in which to quickly identify the rapidly changing ATS market and respond with appropriate policies and programmes. The expansion of targeted capacity building programmes, such as *Global SMART,* which support both forensic and synthetic drug data collection, have been shown invaluable in countries and regions with significant ATS markets. To avoid shifts from one country to another, or one region to the next, there is a growing need for a strategic early warning system to identify emerging synthetic drugs, new products and combinations, controlled and non-controlled, substitute precursor chemicals, diversions (including stopped, suspended and cancelled shipments), common adulterants and key equipment used in their manufacture. This information must be shared quickly at national, regional and international levels so as to allow timely or even preemptive responses.

Given the widespread availability of certain ATS, the rapid emergence of new synthetic drugs and non-controlled substitutes, and their use in school, work and recreational settings, a holistic approach is required which looks beyond internationally controlled ATS into the recreational 'pill market' more generally and integrates responses into the wider concept of health promotion. Investments in prevention programmes that increase the awareness as to the health risk of these drugs appear to have played a role in the decline in use, particularly among youth in developed countries. This has specifically proven successful where prevention and treatment services have met the needs of and been accepted by ATS users. The expansion of evidence-based treatment programmes in developed countries has also reduced the likelihood that problem ATS users return to patterns of chronic drug use. However, evidence-based ATS treatment programmes are often the exception, not the rule, especially in countries where emerging problem ATS use is occurring and health care and treatment professionals are simply not trained or do not have the resources to identify and respond to the unique characteristics manifested in ATS users.

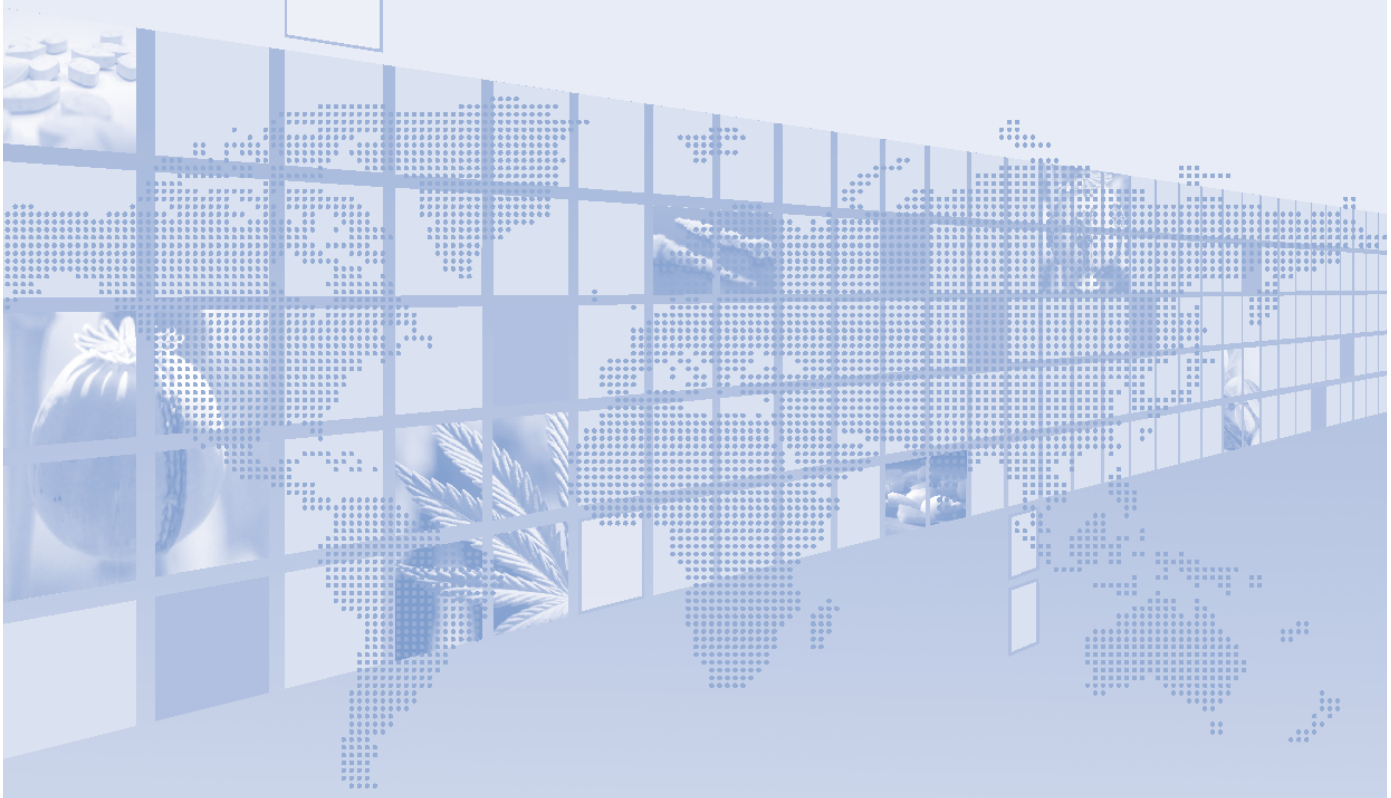
Precursor control works. It is clear that when existing regulatory controls are implemented and all counterparts exert the necessary vigilance to identify unusual transactions, suspicious legitimate needs and fictitious end-uses of precursor chemicals, significant reductions in the availability of precursors for illicit purposes can be made. Understanding legitimate industrial requirements and monitoring the entire chain from precursor manufacture, distribution to end-use, both domestically and internationally, are the only means to identify unusual or suspicious transactions. This also includes scrutinizing annual assessments of legitimate requirements—particularly if these increase significantly year-over-year, and may initially be considered to reflect a newly developing legitimate industry. Systematically checking the legitimacy of individual precursor chemical shipments should become the norm for all countries trading in these substances. The tool for this is available in form of the INCB *Pre-Export Notification* (PEN) online system, which has already proven successful in international precursor operations by stopping suspicious shipments before they leave the country. However, currently only 76 countries (40% of UN Member States) regularly use this real-time system.

Regulatory controls must be complemented by law enforcement action. Seizures should be the beginning of an investigation, not the end. Available specialized investigative techniques include controlled deliveries and back-tracking investigations, which could be utilized more systematically for the ATS end-products, their precursors, and key manufacturing equipment such as new and used pill presses, so as to dismantle the entire criminal manufacture chain. This approach will be of increasing importance also as an element of precursor control strategies, as today diversions often occur at national level, followed by smuggling across international borders.

Better and more timely information, combined with increased awareness of the peculiarities of ATS and their precursors, can be expected to contribute to changing the prevailing low attention devoted towards ATS in some regions, especially those that have historically been associated with the cultivation and/or production of the 'traditional' drugs opium/heroin and cocaine, thus increasing interceptions. Finally, history also shows the importance of regionally and internationally coordinated responses to the ever-changing ATS and precursor chemical situation both in terms of regional shifts and emergence of new precursors, ATS and/or substitutes for either.

60 Spoth, R. and Guyll, M., *Prevention's Cost Effectiveness Illustrative Economic Benefits of General Population Interventions*, in United Nations Office on Drugs and Crime Technical Seminar on Drug Addiction Prevention and Treatment: From Research to Practice, 2008. Iowa State University (December 2008); *Cost effectiveness and cost benefit analysis of substance abuse treatment: an annotated bibliography*, National Evaluation Data Services, Center for Substance Abuse Treatment (SAMSHA), US Department of Health and Human Services, 2002.

2. DRUG STATISTICS AND TRENDS



2.1 Understanding the extent and nature of drug use

Globally, UNODC estimates that between 155 and 250 million people, or 3.5% to 5.7% of the population aged 15-64, had used illicit substances at least once in the previous year. Cannabis users comprise the largest number of illicit drug users (129-190 million people). Amphetamine-type stimulants are the second most commonly used illicit drugs, followed by opiates and cocaine. However, in terms of harm associated with use, opiates would be ranked at the top.

A comprehensive understanding of the extent of the drug use problem requires a review of several indicators – the magnitude of drug use measured by prevalence (lifetime, annual, past 30 days) in the general population, the potential of problem drug use as measured by drug use among young people, and costs and consequences of drug use measured by treatment demand, drug-related morbidity and mortality. Additionally, to understand the dynamics of drug use in a country or region, it is important to look at the overall drug situation rather than merely the trends for individual drugs. This information helps to discern the extent to which market dynamics (availability, purity and price) have temporarily influenced the use, compared to results of long-term efforts such as comprehensive prevention programmes and other interventions to address the drug use situation.

To illustrate, long-term trends in use of different drugs and overall drug use are presented for the United States of America, the United Kingdom, Australia and Spain where trend data over a longer period of time is available. Although short-term changes and trends might be observed in the use of different drugs, long-term trends suggest that the magnitude of the core of the problem does not change considerably in a few years. Indeed, to impact the drug use situation, long-term interventions for prevention of drug use and drug dependence treatment and care, along with supply reduction efforts, are required.

Fig. 92: Illicit drug use at the global level, 2008

Source: UNODC

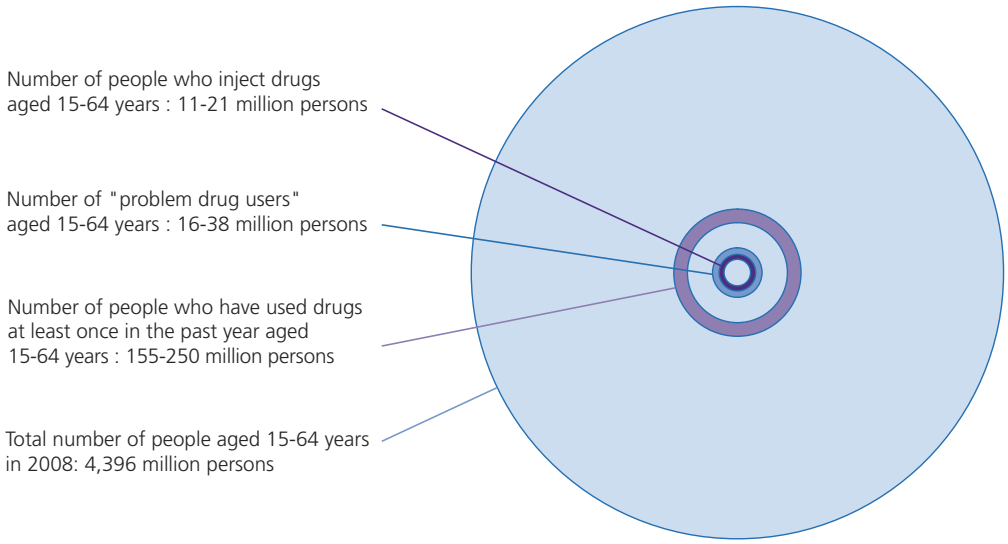
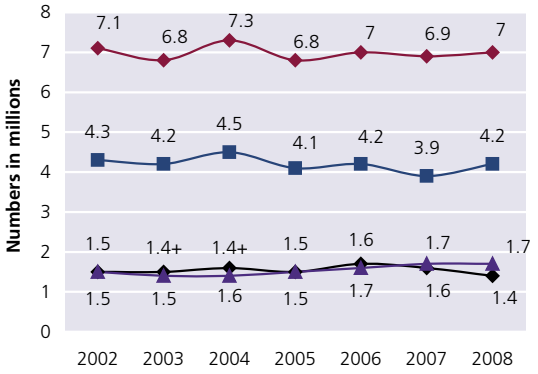


Fig. 93: United States: Dependence on or abuse of drugs in the past year among persons aged 12 or older, 2002-2008*

* The difference between the estimates was only statistically significant for opioid painkillers in 2003/2004 and 2008.

Source: Substance Abuse and Mental Health Services Administration, *Results from the 2000-2008 National Survey on Drug Use and Health: National Findings*, Office of Applied Studies, US Department of Health and Human Services



+ difference between this estimate and 2008 estimate is statistically significant at .05 level

Fig. 94: US: Types of drug use in the past year among persons aged 12 and older, 2000-2008

Source: Substance Abuse and Mental Health Services Administration, *Results from the 2000-2008 National Survey on Drug Use and Health: National Findings, Office of Applied Studies*, US Department of Health and Human Services

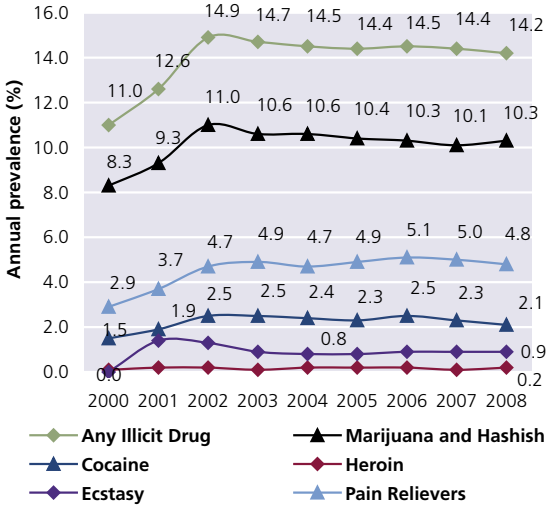


Fig. 95: UK: drug use trends among population aged 16-59, 2000-2008/2009

Source: Hoare J, Home Office Statistical Bulletin, *Drug Misuse Declared: Findings from the 2008/09 British Crime Survey, England and Wales*, Home Office, UK July 2009

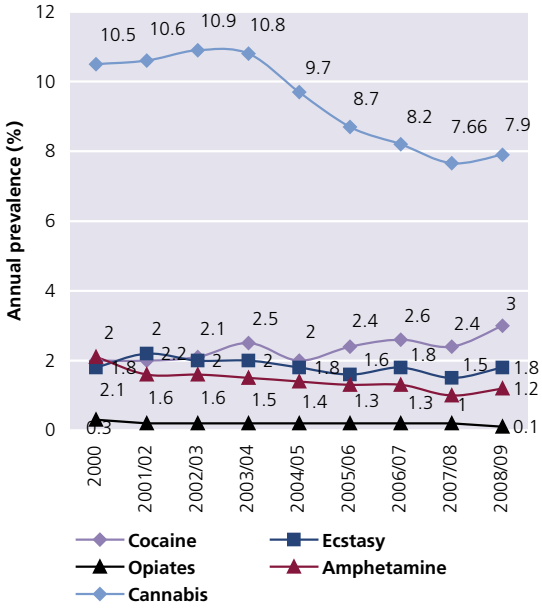


Fig. 96: Australia: drug use trends among population aged 14 and over, 1991-2007

Source: Australia, *National Campaign Against Drug Abuse Household Surveys 1991, 1993, National Drug Strategy Household Survey 1995, 1996, 2001, 2004 and 2007*

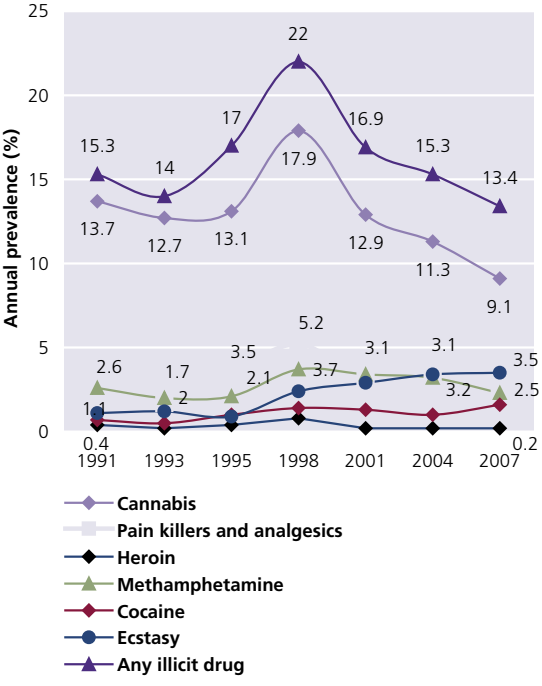


Fig. 97: Spain: drug use trends among population aged 15-64, 1995-2007/08

Source: UNODC and EMCDDA

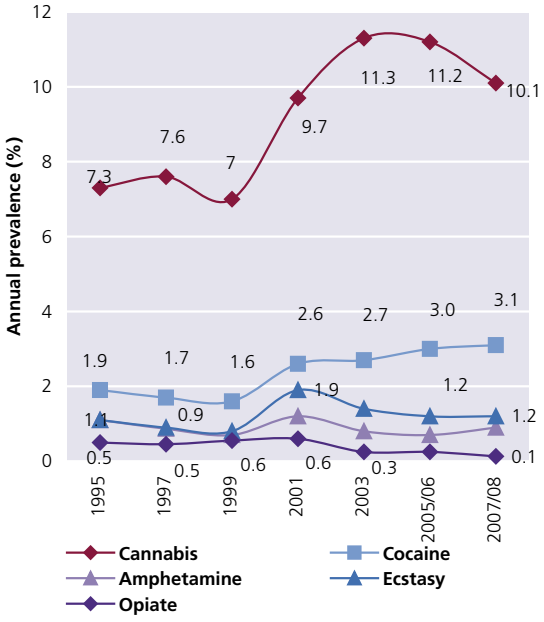
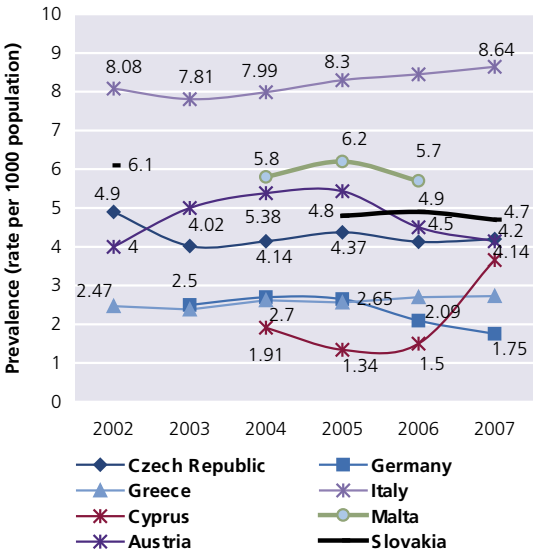


Fig. 98: Europe: Estimated trends in overall problem drug use in selected countries from where data was available (2002-2007), rate per 1,000 population aged 15-64

Source: EMCDDA – Statistical Bulletin 2009



Problem drug use

At the core of drug use lie the problem drug users; those that might be regular or frequent users of the substances, considered dependent or injecting and who would have faced social and health consequences as a result of their drug use. Information on problem drug users from a policy and programme planning perspective is important as this drives the need and nature of the services required to address the diverse needs for treatment and care of drug dependent persons.

Lack of a global standard definition of a problem drug user

One of the main challenges for UNODC remains the compilation of data reported by Member States and their comparability across countries and regions. The Commission on Narcotics Drugs in its forty-third session in 2000 endorsed the paper on 'Drug information systems: principles, structures and indicators'[1] – also known as the 'Lisbon Consensus Document'. The document outlines the set of core epidemiological indicators to monitor the drug abuse situation, against which Member States could report their respective situations through the Annual Reports Questionnaire (ARQ). One of the core indicators in the paper was 'high-risk drug consumption'. The assumption was that some drug-taking behaviours were particularly associated with severe problems and as such merit the attention of policymakers. The document further elaborated that high-risk consumption included information on the number of drug injectors, estimates of daily users and those who are dependent. One challenge in measuring problem drug users or high-risk drug consumption is that most of these behaviours are hidden and have low prevalence. Therefore, they are poorly covered by general population estimates. Specific methods are required to gather information on such behaviours.

Out of the 110 Member States who responded to the 2008 ARQ on the extent and pattern of drug use, only 24 reported information on problem drug use. The definitions and methods of calculation differ from country to country. One country in Africa defines problem drug use as "drug users who constitute social harm and insecurity and drug users who relapse after rehabilitation."[2] In North America, the DSM-IV[3] defines the criteria for illicit drug dependence or abuse, while one country in Asia only considers heroin injectors as problem drug users. The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), in its efforts to compile comparable information on problem drug use, defines it as "injecting drug use or long duration/regular use of

1 Drug information systems: principles, structures and indicators (E/CN.7/2000/CRP.3).

2 ARQ: Nigeria 2008.

3 American Psychiatric Association, *Diagnostic and Statistical Manual on Mental Disorders (see Box in cocaine market chapter).*

Drug use – nature and typology

Scientific evidence indicates that the drug use is a result of a complex multifactorial interaction between repeated exposure to drugs, and biological and environmental factors. In recent years, the biopsychosocial model has recognized drug dependence as a multifaceted problem requiring the expertise of many disciplines. A health sciences multidisciplinary approach can be applied to research, prevention and treatment of drug use.

Recreational

Some forms of drug use are associated with recreational settings or specific sub-populations, for example, ecstasy use, which is found more among young people and associated with particular lifestyle and events (parties, nightclubs and dance events) seen in many affluent societies. Also among those who use drugs in recreational settings, a significant proportion could be induced to substance abuse with the purpose of coping with anxiety, poor emotional skills, poor capacity to manage stressful stimuli and difficult environmental situations, poor engagement in school and lack of vocational skills.

Society, family, life experience

Use of opiates, cocaine, amphetamine and methamphetamine, and those injecting, account for a substantial proportion of dependent or problem drug users (however defined). These drug users also tend to be more chronic users, with associated psychiatric and medical co-morbidities, and are either stigmatized or come from marginalized segments of society. Many studies have shown a strong association between poverty, social exclusion and problem drug use.

Studies also suggest the possibility that childhood experiences of neglect and poor parent-child attachment may partially contribute to a complex neurobiological derangement and dopamine system dysfunctions, playing a crucial role in susceptibility to addictive and affective disorders.[1]

Different kinds of adverse childhood experiences, such as self-reported supervision neglect, physical neglect, physical assault and contact sexual abuse, have been reported in association with adolescent cigarette, alcohol, cannabis and inhalant use, as well as violent behaviour.[2]

Epidemiological data also show a frequent association between stress-related disorders such as post traumatic stress disorder (PTSD) and substance use disorder. Studies have examined the association between traumatic exposure, PTSD and substance use that have shown early onset of marijuana and heroin use, while alcohol dependence and opiate dependence were each associated with exposure to a traumatic event.[3]

Psychiatric disorders

Further studies have shown that individuals with lifetime mental disorder were three times more likely than others to be dependent on substances. Patients suffering from bipolar disorders (manic-depressive disorders) are more likely to be using psychoactive substances compared with those suffering from unipolar major depression.[4] On the other hand, use of psycho-stimulants such as amphetamine or cocaine and cannabis can also induce psychotic-like symptoms in users.

1 Gerra G. et al., "Childhood neglect and parental care perception in cocaine addicts: Relation with psychiatric symptoms and biological correlates," *Neuroscience and Biobehavioral Reviews*, 33 (2009) 601-610.

2 Hussey J.M., Chang J.J. and Kotch J.B., "Child maltreatment in the United States: prevalence, risk factors, and adolescent health consequences", Pediatrics, September 2006, 118(3):933-942.

3 Gerra G., Somaini L., Zaimovic A., Gerra M L., Maremmani I., Amore M. and Ciccocioppo R., *Developmental Traumatic Experiences, PTSD and Substance Abuse Vulnerability: The Neuroobiological Link*, Neurobiology of Post Traumatic Stress Disorder, June 2010 ISBN: 978-1-61668-851-6.

4 World Health Organization *Neuroscience of psychoactive substance use and dependence*, Geneva 2004.

opioids, cocaine and/or amphetamines."[4] The broad scope and differences in defining and understanding problem drug use in different regions signifies the need for setting common parameters, based on an already acceptable definition or criterion, for example, DSM-IV or ICD – 10 (WHO International Classification of Diseases – Revision 10), for determining, reporting and comparing the extent of harmful or high risk drug use at global level.

The global number of problem drug users is stable

Based on the global estimates of cannabis, opiate, cocaine and amphetamine-type stimulant users, and using the relative risk coefficient,[5] it is estimated that in 2008, there were between 16 and 38 million problem drug users (between 10%-15% of estimated drug users) in the world. The broad range of the estimate reflects the uncertainties in the available data globally.

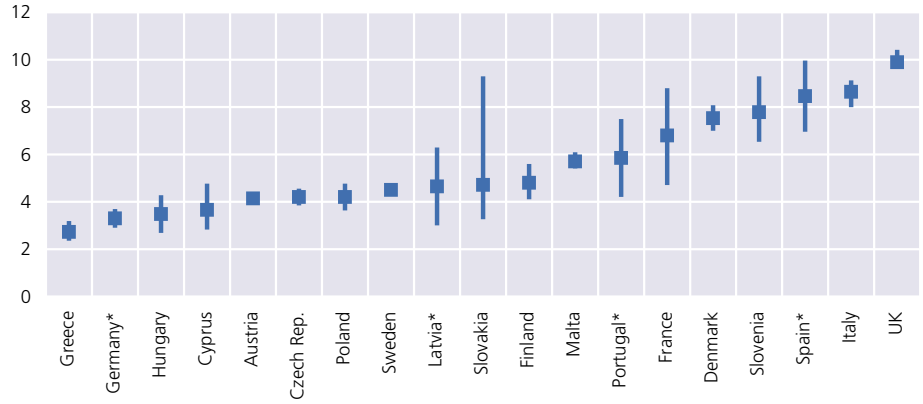
4 EMCDDA *Guidelines for Estimating the Incidence of Problem Drug Use*, February 2008.

5 The relative risk coefficient takes opiates as the index drug and calculates the coefficient for treatment, injecting drug use, toxicity and deaths.

Fig. 99: Europe: Estimates of problem drug use (rate per 1,000 population aged 15-64)*

* The methods for estimation of problem drug users differ between countries, but include capture/recapture, treatment multiplier, police multiplier, et cetera.

Source: EMCDDA, *Statistical bulletin 2009: Problem drug use population,* 2009



In Europe, the prevalence rate of problem drug users varies between 2.7 in Greece and 9.0 in UK as rate per 1,000 population aged 15-64. The United Kingdom, Italy and Spain are on the higher end of the range, whereas Greece, Germany and Hungary are countries with low rates of problem drug use.

In the United States, 7 million people - or 2.8% of the population aged 12 and older - were considered substance dependent, abusing illicit substances in 2008. Cannabis was the illicit substance with the highest rate of past year dependence, followed by pain relievers (opioids) and cocaine.[6] In Canada, 2.7% of the population aged 15 and older were reported to have experienced at least one type of harm in the past year due to illicit drug use. 'Harm' in the Canadian reports is classified as harm to physical health, or in the social, employment and legal spheres.[7]

Injecting drug users (IDU)

Among the most problematic drug users are those who inject drugs. The last available estimate of the global number of IDU remains the one developed by the UNODC/UNAIDS reference group in 2008, which estimated that there are 15.9 million people who inject drugs (between 11 – 21.2 million).[8] Of these, 3 million may be living with HIV (range 0.5-5.5 million). East Europe (1.5%) and Australia and New Zealand (1.03%) have a high prevalence of injecting drug use. In absolute numbers, East Europe has one of the highest numbers of injecting drug users. In East Europe most of the injectors are using opiates, while in Australia and New Zealand, methamphetamine is the main substance being injected.

Gap in provision of services to problem drug users

The estimate of the global number of problem drug users provides the range of the number of people who need assistance to address their drug problems, including treatment of drug dependence and care. Comparing this with the number of people who are in treatment provides the magnitude of the unmet need for treatment of illicit drug use. Notwithstanding the gap in reporting and coverage of services, Member States reported that between 42% (in South America) and 5% (in Africa) of problem drug users were treated in the previous year. It can be estimated that globally, between 12% and 30% of problem drug users had received treatment in the past year, which means that between 11 million and 33.5 million problem drug users in the world have an unmet need for treatment interventions.

During the High-level Segment of the Commission on Narcotic Drugs in 2009, Member States adopted a Political Declaration and Plan of Action. The Plan of Action called for Member States to ensure that access to drug treatment is affordable, culturally appropriate and based on scientific evidence, and that drug dependence care services are included in the health care systems. It also called for the need to develop a comprehensive treatment system offering a wide range of integrated pharmacological (such as detoxification and opioid agonist and antagonist maintenance) and psychosocial (such as counselling, cognitive behavioural therapy and social support) interventions based on scientific evidence and

6 Substance Abuse and Mental Health Services Administration, *Results from the 2008 National Survey on Drug Use and Health: National Findings*, US Department of Health and Health Services, Office of Applied Studies.

7 Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey: Summary of Results for 2008.*

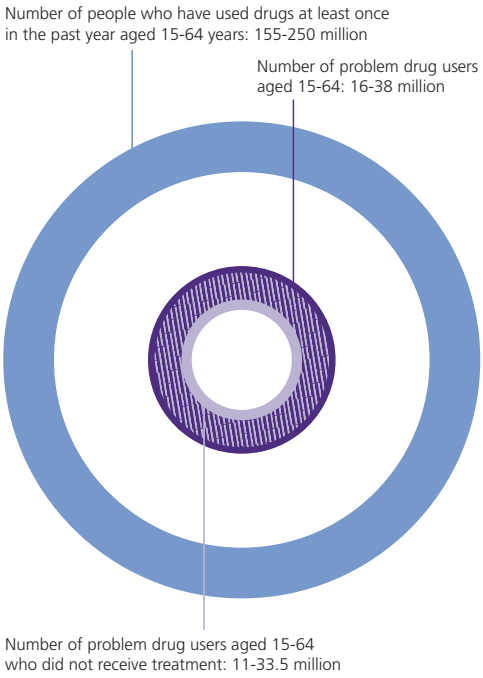
8 Mathers B.M., Degenhardt L., Ali H., Wiessing L., Hickman M., Mattick RP., et al. "HIV prevention, treatment and care services fro people who inject drugs a systematic review of global, regional and national coverage," *The Lancet*, 2010; 375(9719:1014-28).

focused on the process of rehabilitation, recovery and social reintegration.[9]

The costs for the delivery of evidence-based treatment is seen to be much lower than the indirect costs caused by untreated drug dependence (prisons, unemployment, law enforcement and health consequences). Research indicates that spending on treatment produces savings in terms of a reduction in the number of crime victims, as well as reduced expenditures for the criminal justice system. At a minimum there was a 3:1 savings rate, and when a broader calculation of costs associated with crime, health and social productivity was taken into account, the rate of savings to investment rose to 13:1. These savings can improve disadvantaged situations where opportunities for education, employment and social welfare are undermined, and increase possibilities for families to recover battered economies, thus facilitating social and economic development.[10]

Fig. 100: Unmet need for treatment interventions, 2008

Source: UNODC



9 UNODC, *Political Declaration and Plan of Action on International Cooperation Towards an Integrated and Balanced Strategy to Counter the World Drug Problem,* High-level segment, Commission on Narcotic Drugs, Vienna, 11-12 March 2009

10 UNODC and WHO, *Principles of Drug Dependence Treatment: Discussion Paper* , March 2008, also see Gossop M, Marsden J and Stewart D, *The National Treatment Outcome Research Study: After 5 years – Changes in substance use, health and criminal behaviour during the five years after intake,* National Addiction Centre, London 2001.

Assessment of the services provided to injecting drug users to respond to HIV

The morbidity and mortality associated with injecting drug use (IDU) is a global public health issue. Of particular significance is the spread of HIV between people who inject drugs, through the sharing of injecting equipment, and through sexual transmission to the wider population.

Responding to IDU is an essential component of the global response to HIV. During the 2009 High-level Segment of the Commission on Narcotic Drugs and in other forums, countries and UN agencies centrally involved in the HIV response for injecting drug users - UNODC, WHO and UNAIDS - endorsed a comprehensive package of interventions that are necessary to prevent and control HIV among IDUs.[1] These include: needle and syringe programmes (NSP); opioid substitution therapy (OST) and other drug treatment modalities; HIV testing and counselling; antiretroviral therapy for HIV (ART); targeted information and education for IDUs; prevention and treatment of viral hepatitis, sexually transmitted diseases and tuberculosis; and condom distribution programmes.

NSPs provide clean injecting equipment to IDUs; a crucial way to reduce injecting risk, and a contact point for providing health information to IDUs. These exist in 82 of the 151 countries where injecting drug use is known to occur. Only 7.5% (range 5.4%-11.5%) of IDUs worldwide are estimated to have accessed an NSP in a 12-month period. Globally, 22 clean syringes are estimated to be distributed per IDU in a year, meaning most injections worldwide occur with used injecting equipment.

Long acting opioid maintenance therapy, or opioid substitution programmes (OST) have been introduced in 71 countries, but remain absent in many where the prevalence of opioid injection is high. It is estimated that globally there are only 8 (range 6-12) OST recipients for every 100 IDUs, suggesting coverage of only a small proportion of IDUs who might benefit from this treatment for drug dependence.

ART is important not only for treating IDUs who have contracted HIV, but also in preventing HIV transmission.[2] From the limited data available, it is estimated

1 WHO/UNODC,UNAIDS, *WHO, UNODC, UNAIDS Technical Guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users*, Geneva, 2008.

2 Degenhardt L., Mathers B.M., Vickerman P., Hickman M., Rhodes T., Latkin C., "HIV prevention for people who inject drugs: Why individual, structural, and combination approaches

that 4 (range 2-18) HIV-positive IDUs receive ART for every 100 IDUs living with HIV. Although coverage is high in many western European countries, access to ART is limited for IDUs throughout the rest of the world, with rates of coverage lower than for other people living with HIV.[3]

Map 13: Availability of HIV prevention services for injecting drug users

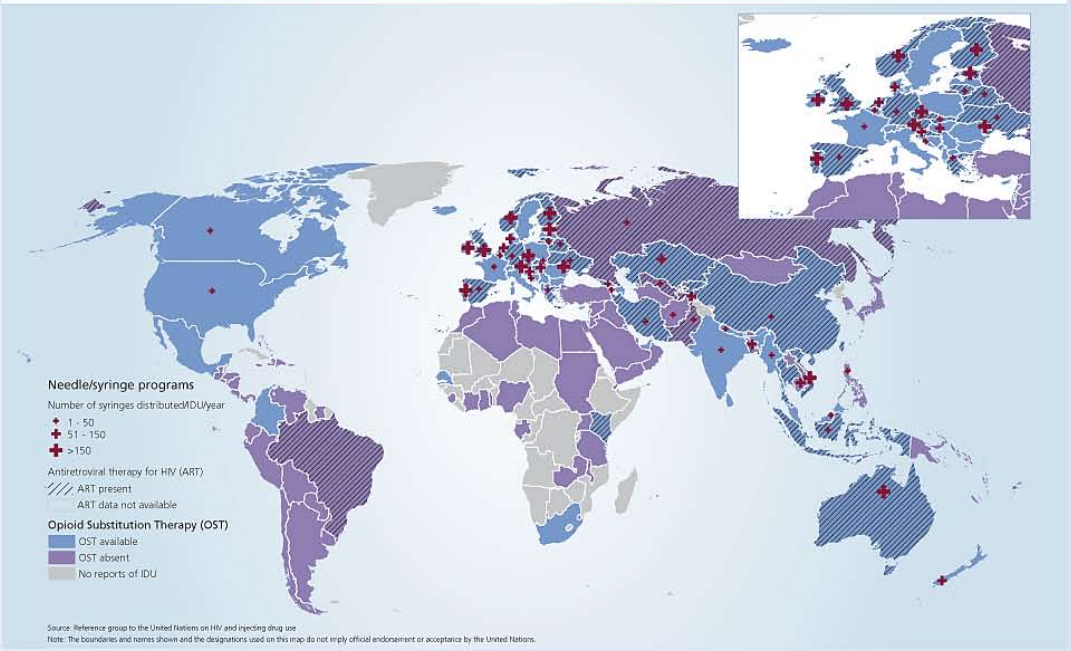


Table 13: Regional and global estimates of the coverage of NSP, OST and ART for IDUs

Note: For details of the data on which these estimates are based, please see footnote 10. The number of countries for whom data were located varies across indicators and regions. Details can be examined elsewhere (footnote 10) and country reports are available at www.IDUrefgroup.com.

Region	Needles-syringes distributed per IDU per year (range)	Number of OST recipients per 100 IDUs (range)	Number of IDUs receiving ART per 100 IDUs living with HIV (range)
East Europe	9 (7 – 14)	1 (<1 – 1)	1 (<1 – 44)
West Europe	59 (39 – 89)	61 (48 – 79)	89 (52 – XXXX)
East and South-East Asia	30 (7 – 68)	3 (3 – 5)	4 (2 – 8)
South Asia	37 (27 – 50)	19 (15 – 25)	1 (1 – 2)
Central Asia	92 (71 – 125)	<1 (<1 – <1)	2 (1 – 3)
Caribbean	–	5 (4 – 7)	–
Latin America	<1 (<1 – 1)	1 (<1 – <1)	1 (1 – 4)
Canada and United States	23 (17 – 33)	13 (9– 19)	–
Pacific Island States and Territories	<1 (<1 – <1)	0	0
Australasia	202 (148 – 334)	23 (17 – 39)	22 (10 – 89)
Middle East and North Africa	<1 (<1 – 1)	1(<1 – 1)	–
Sub-Saharan Africa	<1 (<1 – <1)	1 (<1 – <1)	<1 (<1 – 2)
GLOBAL	**22 (12 – 42)**	**8 (6 – 12)**	**4 (2 – 18)**

are required," *The Lancet* 2010 (in press).

3 Wolfe D., Carrieri M.P., Shepard D., Walker D., "Treatment and Care for HIV-infected People who Inject Drugs: A Review of Barriers and Ways Forward," *The Lancet* (in press).

Effective treatment for heroin and crack dependence: UK Drug Treatment Monitoring System Outcomes Study Group

In the United Kingdom, using data from the national Drug Treatment Monitoring System, a prospective cohort study looked at treatment outcomes of 14,656 heroin and crack addicts. The effectiveness of treatment was assessed from changes in the days of heroin or crack cocaine use or both in the 28 days before the start of treatment and in the 28 days before the study review.

The study shows that the first six months of pharmacological or psychosocial treatment is associated with reduced heroin and crack cocaine use, but the effectiveness of pharmacological treatment is less pronounced for users of both drugs.

Source: Marsden J, Eastwood B, et al, *Effectiveness of community treatments for heroin and crack cocaine addiction in England: a prospective, in-treatment cohort study*

Trends in the main drugs of concern in problem drug users as indicated by treatment demand

An analysis of the number of treatment services provided in a country according to the main drug for admission can provide information on the drugs that are most problematic in terms of health and social consequences and need for intervention.

The treatment demand data presented here cover the 10-year period from the late 1990s to 2008. Data for all but 2008 were published in the *World Drug Report* 2000 (for 1997/1998, labelled as the late 1990s) and WDR 2005 through 2009 (for the years 2003 to 2007, or latest year available at the time of publication).

The data show that there is generally, in each region, a clear, and over the past 10 years consistent, drug type that dominates treatment. This suggests marked regional differences in the drugs that affect problem drug users. Indeed, in the last decade, the primary drug for treatment has remained cannabis in Africa, cocaine in South America and opiates in Asia and Europe. The two notable exceptions are: 1) North America, where a dominant drug for treatment demand does not emerge, and rather, the percentage breakdown of drugs has become more uniform over time, and 2) Oceania, which has experienced over time one of the biggest changes in the primary treatment drug from opiates to cannabis.

The changes observed over the last decade in the contribution that each drug has made to treatment admissions suggest an ongoing diversification of problem drug users in some regions. The contribution of cannabis to treatment demand is increasing in Europe, South America and Oceania, while admissions for synthetic opiates in North America sharply increased in the last few years, compensating for decreased admissions for heroin. In Europe, the admissions for stimulants (cocaine and amphetamine-type stimulants) and cannabis have also increased over time, in parallel with a decline in admissions for opiates.

Interpreting trends in treatment demand data is challenging as patterns and trends over time can reflect a mixture of factors, such as:

- the development and improved coverage of drug treatment reporting systems;
- statistical artefacts, for example, resulting from different countries reporting in a region in different time periods (notably in Africa);
- changing patterns of consumption including prevalence, frequency of drug use and the typical amounts used on each occasion;
- prevention measures and the availability, accessibility and utilization of treatment services;
- response of the criminal justice system to drug offenders, such as compulsory treatment as an alternative to imprisonment.

Opiates main problem drug by far in Europe and Asia, but declining in Oceania

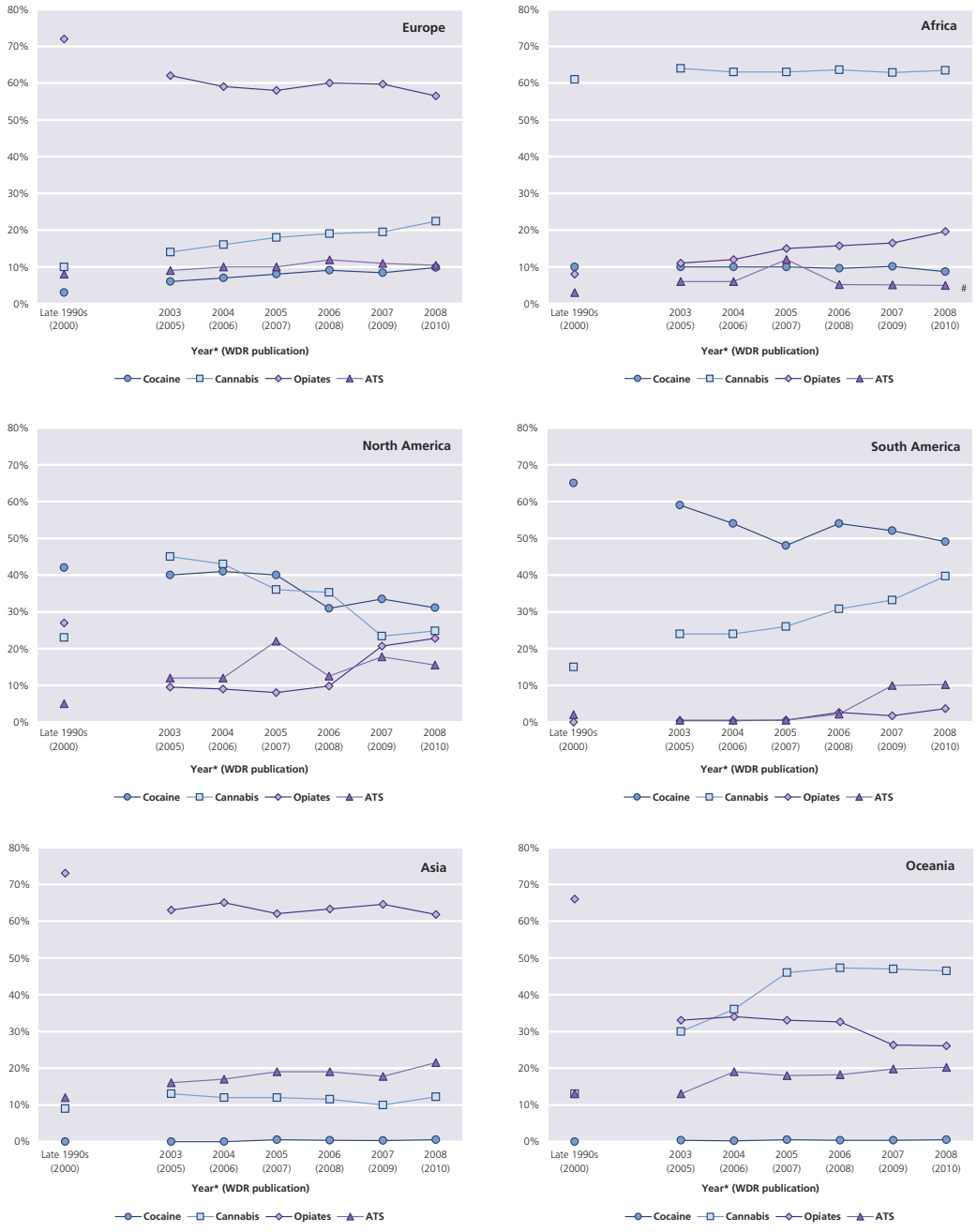
Opiates are clearly the main problem drug as indicated by treatment demand over the past 10 years in Europe (with at least 55% of demand) and Asia (consistently more than 60% of demand).

Opiates have also increased their contribution in Africa from 8% (late 1990s) to 20% (2008). While there has been an increase in opiate-related treatment in Africa over the last decade, the strong increase is, however, to some extent, a statistical artefact as previous treatment data (dating back more than 10 years) were removed and could not be replaced as no new data were forthcoming. Therefore, data from smaller island countries - such as Mauritius or the Seychelles, where the proportion of opiate treatment has historically been very high - contribute more to the treatment demand for opiates in Africa.

Opiate-related treatment has recently exhibited a large increase in North America, from 10% (2006) to 23% (2008), reflecting the rising abuse of synthetic opioids, and are possibly starting to emerge in South America. Oceania has experienced a striking decline in the contribution of opiates to treatment demand from 66% (late 1990s) to 26% (2008), in line with the severe heroin shortage of 2001 in Australia which convinced many heroin addicts to give up their habit.

Fig. 101: Regional patterns and trends in main problem drugs as reflected in treatment demand

Sources: UNODC, Annual Reports Questionnaire Data/DELTA and National Government Reports



Notes: Percentages are unweighted means of treatment demand in reporting countries.

An 'Other drugs' category is not included and so totals may not add up to 100%. Alternatively, polydrug use may increase totals beyond 100%.

Number of countries reporting treatment demand data: Europe (30 to 45); Africa (15 to 41); North America (3); South America (21 to 26); Asia (27 to 43); Oceania (1 or 2).

* year specified or latest year available at time of WDR publication.

Treatment data dating back more than 10 years were removed from the 2008 estimates and therefore caution should be taken in comparing the data from 2008 with previous years.

Synthetic opioids are increasingly linked with problem drug use in North America

Treatment demand data from the United States of America[11] and Canada[12] both show an increase of problem drug users linked to the use of synthetic opioids/prescription medicine and a decline in the heroin-related problem users. In the United States, admissions where opiates were the primary drug of concern increased by 34% between 1997 and 2007 (typically representing 29-32% of demand for treatment, excluding alcohol). Heroin is still the major contributor to the treatment demand for opioids, but this has become less marked with the steady increase in demand for treatment for synthetic opioids. The contribution of heroin to opioid admissions has continually declined from 94% (1997) to 73% (2007), with the number of admissions for heroin starting to decline in 2002. In contrast, the number of admissions for other opiates/synthetic opioids has increased from 16,274 to 90,516 (more than 450%) between 1997 and 2007, from contributing just 6% of opioid admissions in 1997 to 27% in 2007. A similar situation is found in Canada. Treatment demand for prescription opioids has been greater than for heroin/opium over the past few years, and it is still increasing. Treatment demand data from Ontario show that the number of admissions for opioids increased 55% between 2004/2005 and 2008/2009, or from 14.7% to 18.5% of all drug treatment demand (excluding alcohol and tobacco). This increase is attributable to the 68% rise in admissions for prescription opioids/codeine (heroin/opium admissions actually declined 5%). The contribution of prescription opioids/codeine to all admissions (excluding alcohol and tobacco) has increased from 12.1% to 16.5%, while the heroin/opium contribution has declined from 2.6% to 2.0%.

Cannabis is an increasingly problematic drug

Although it is the world's most widely used drug, cannabis is often thought to be the least harmful and of little interest to public health, in spite of the fact that evidence in recent years has shown that the use of cannabis can create remarkable levels of harm. Data on treatment demand for cannabis and medical research have pointed to the potentially severe health consequences of cannabis use.

The most probable adverse effects of cannabis use include dependency, increased risk of motor vehicle accidents, impaired respiratory function, cardiovascular disease and adverse effects of regular use on adolescent psychosocial development and mental health.[13] The

Fig. 102: Treatment admissions for opiates, 1997-2007 (North America)

Note: Percent of admissions excluding alcohol.
Source: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS)

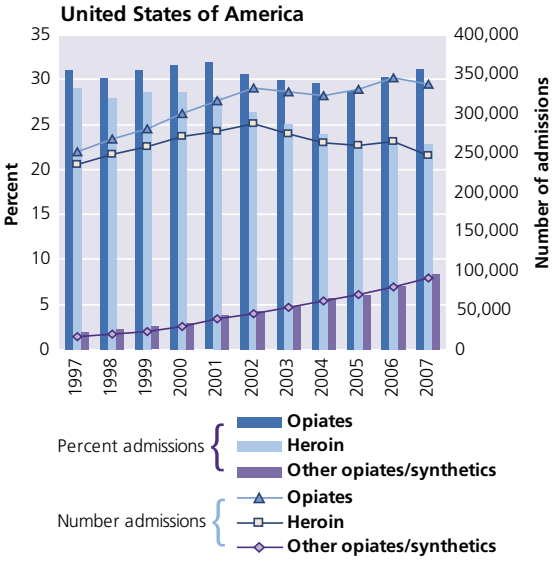
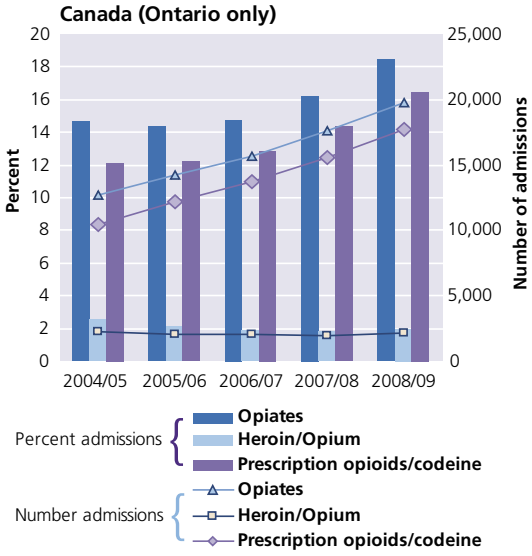


Fig. 103: Treatment admissions for opiates, 2004-2009 (North America)

Note: Percent of admissions excluding alcohol, tobacco and not specified.
Source: Substance Abuse Statistical Tables, DATIS, Centre for Addiction & Mental Health, July 2009



11 Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS).

12 Substance Abuse Statistical Tables, DATIS Centre for Addiction & Mental Health, July 2009.

13 Hall W., and Degenhardt, L., "Adverse health effects of non-medical cannabis use," *The Lancet*, Volume 374, Issue 9698, Pages 1383 - 1391, 17 October 2009.

rising number of cannabis-related problem drug users is often not correlated with a similar rise in the overall number of cannabis users, suggesting that the risks associated with the use of cannabis have been increasingly recognized and diagnosed in recent years. Rising levels in cannabis potency in many parts of the world (notably in industrialized countries) have also contributed to the increased risk of cannabis use.

Cannabis is clearly the dominant drug for treatment in Africa with consistently over 60% of demand. Over the past 10 years, cannabis has been making an increasing contribution to treatment demand in Europe (more than doubling from 10% to 22%), South America (more than doubling from 15% to 40%) and Oceania (more than trebling from 13% to stabilize around 47%). Only North America has seen a reduction in the contribution of cannabis to treatment demand compared to other drugs.

Harmful levels of cannabis use on the rise in Australia

Treatment episodes where cannabis was the primary drug of concern increased in Australia by 34%, from 23,826 to 31,864 between 2002 and 2008 alone,[14] despite a sharp decline in cannabis use among the general population.

Possible explanations for the increasing trend in the problematic use of cannabis and cannabis-related harm include: increased consumption among older users reflecting dependence among those who have had a long history of use that was initiated at a relatively young age; and the increased availability of cheaper and possibly higher potency cannabis. Referrals from the criminal justice system do not seem to have had an influence on the increase in the numbers entering treatment in Australia.[15]

Contributing factors for increasing treatment demand for cannabis in Europe remain uncertain

Cannabis ranks second for treatment demand at the European level and its contribution to drug treatment demand has been steadily increasing. The EMCDDA has been documenting rising levels of demand for treatment from cannabis-related problems since 1996, but there are wide discrepancies between countries. In 2006, 21% of all European clients and 28% of new clients entered treatment with cannabis as the primary drug of concern. In Denmark, Germany, France, Hungary and Turkey the percentage of new clients seeking treatment for cannabis as the primary drug was greater than 50%. However, reasons for the increase in demand have proved difficult to identify and EMCDDA recommends further research[16] to tackle this issue.[17]

The effect of poly-drug use in the treatment statistics should not be disregarded. While drug treatment seekers in the past may have been registered almost automatically for heroin, they may now be more accurately registered as having cannabis as the primary problem drug while consuming other drugs as well. Moreover, the increasing complexity of drug use makes it difficult to have a simple characterization of problem drug users according to a single drug type. In the context of drug users combining the use of different drugs to get the effect they want to achieve, the use of cannabis becomes potentially more harmful because its effect combined with other drugs can be very different from when it is used alone.

Cocaine is the main problem drug in the Americas, but its contribution is declining in North America

Treatment demand for cocaine is most dominant in the Americas, where coca cultivation is concentrated. Cocaine is the main problem drug according to treatment demand for South America (with more than 50% of demand), and where once it appeared to be on the decline, over the last few years, the situation has stabilized. Although cocaine was the main drug for treatment in North America in the late 1990s, the cocaine-related treatment demand has been declining over the last decade, and was responsible for just 31% of total treatment demand in 2008. In Europe, the treatment demand, in contrast, increased from 3% to 10% over the same period. Cocaine-related treatment demand in Africa accounts for less than 10% of the total,[18] and in Asia and Oceania demand is negligible (<1%).

ATS treatment demand is relatively small but not unimportant

Asia has the highest percentage of admissions for amphetamine-type stimulants (ATS), where it ranks as the second most important drug. In Oceania and North America, treatment demand for ATS has increased to some 20% since the late 1990s. Otherwise, demand for treatment has remained below approximately 10% in other regions, with a possible recent emergence in South America. It should be noted that treatment for ATS is often administered differently than for other drugs, and can be easily under-reported.

14 Australian Institute of Health and Welfare (AIHW), *Alcohol and other drug treatment services in Australia 2007–08: report on the national minimum data set*, Drug treatment series no. 9, cat. no. HSE 73, Canberra, 2009.

15 Roxburgh, A., Hall, W.D., Degenhardt, L., McLaren, J., Black, E., Copeland, J., and Mattick, R.P. "The epidemiology of cannabis use and cannabis-related harm in Australia 1993–2007," *Addiction*, 2010 Mar 12. Pre-publication early view.

16 EMCDDA, *A cannabis reader: global issues and local experiences*, Monograph series 8, Volume 2, Lisbon, 2008.

17 EMCDDA, *Annual report on the state of the drugs problem in the European Union and Norway. Cannabis problems in context — understanding the increase in European treatment demands*, Lisbon, 2004.

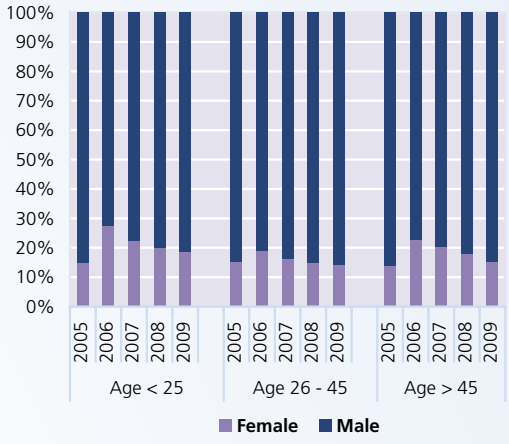
18 In contrast to the data shown, there are no indications of any decline in cocaine-related treatment demand in Africa over the last decade. The lower demand shown is a statistical artefact resulting from the removal of treatment data dating back more than 10 years.

Gender and the illicit drug markets

The markets for illicit drugs affect more men than women worldwide, both in terms of use and trafficking of illicit substances. Data that characterize traffickers of illicit drugs are scarce. In 2009, the Commission on Narcotic Drugs, in its resolution 52/1, stressed the importance of collecting and analysing data disaggregated by sex and age, and of conducting research on gender issues related to drug trafficking, especially the use of women and girls as drug couriers. The Commission called for improved data collection and recommended the undertaking of a gender analysis based on available data. One data source that can be used to generate a gender analysis of drug traffickers is the Individual Drug Seizures Database, where data submitted by a limited number of countries (between 30 and 50 from all regions) report the characteristics of traffickers associated with each individual seizure.[1] These data show that the great majority of drug traffickers are men. They also suggest that, irrespective of age, the percentage of female traffickers slightly decreased between 2006 and 2009, reaching between 15% and 20% of detected traffickers in 2009.

Fig. 104: Trends in gender distribution of drug traffickers, 2005-2009

Source: UNODC Individual Drug Seizures Database



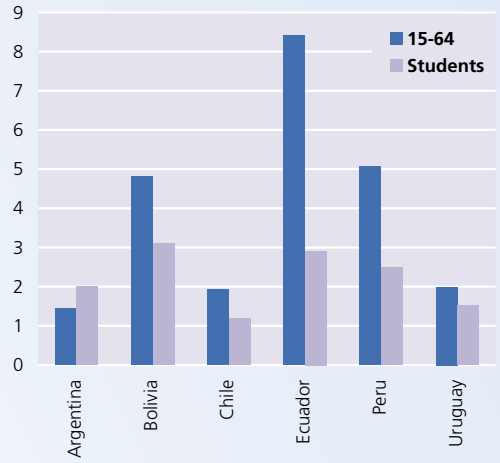
The use of illicit drugs is more balanced between males and females, but it still sees a higher number of men involved. For all drugs, the gender gap between males and females is lower among the young population than for the adults.

Male students outnumber females in the use of cocaine and cannabis in all European countries. In contrast, female students more frequently report tranquillizer use in virtually all countries and ecstasy use in some countries.[2]

A gender gap between the young and older generations is also apparent in South America. One comparative study shows, for example, that in all six analysed countries, except Argentina, the gender ratio[3] of cannabis use is lower for students than the adult population, though with large variations across countries. Data from Latin America and other parts of the world suggest that the more advanced the country, the higher the proportion of females among drug users.

Fig. 105: Gender ratio in lifetime cannabis use, selected South American countries

Sources: UNODC/Organization of American States (OAS), *Informe subregional sobre uso de drogas en población escolarizada, segundo estudio conjunto,* 2009; UNODC/OAS, *Elementos orientadores para las políticas públicas sobre drogas en la subregion – primero estudio comparativo sobre consumo de drogas y factores asociados en población de 15 a 64 años,* 2008



In general, substance dependence and abuse is also higher for males than females, although in the United States an age-specific analysis reveals that in 2008, the rate of substance dependence was higher for females (8.2%) than males (7.0%) in the population aged 12 to

1 Data on the gender composition of drug-related arrestees could also be reported by Member States in the ARQ. However, this data can hardly be utilized for a gender analysis because very few countries provide the sex-breakdown of the data on arrestees with little comparability across countries.

2 EMCDDA, *A gender perspective on drug use and responding to drug problems*, Lisbon 2006.

3 Ratio of prevalence among males and females.

17, while the same rate was almost double for males (12.0%) than females (6.3%) in the population 18 years and older.[4] There are few studies that analyse gender differences in accessibility of treatment services. In 2004 in Europe, there was a ratio of 4:1 between males and females in treatment. The high ratio (higher than the ratio between male and female drug users) can be explained by the higher risk of becoming problem drug users observed for males. At the same time, according to the EMCDDA, there are no studies that can provide definitive answers on the gender distribution of the unmet treatment needs of problem drug users.[5] In many countries where gender roles are culturally determined and women are not empowered, gender differences can be reflected in a lack of access to treatment services which could be due to: a) higher stigma for women who use drugs than for men, and/or b) the fact that services do not cater for women (for example, they do not admit women or do not cater for the needs of safety and childcare). An illustrative example of the lack of accessibility can be found in Afghanistan, where in 2008 there were only three residential drug treatment facilities for women with adjacent child care and treatment facilities, despite the high level of heroin and opium use among the female population.[6]

4 Substance Abuse and Mental Health Services Administration, *Results from the 2000 - 2008 National Survey on Drug Use and Health: National Findings*, Office of Applied Studies, US Department of Health and Human Services.

5 EMCDDA, *A gender perspective on drug use and responding to drug problems*, Lisbon, 2006.

6 Report to the US Congress, *Report on Progress Toward Security and Stability in Afghanistan*, April 2010.

2.2 Opium/heroin

2.2.1 Production

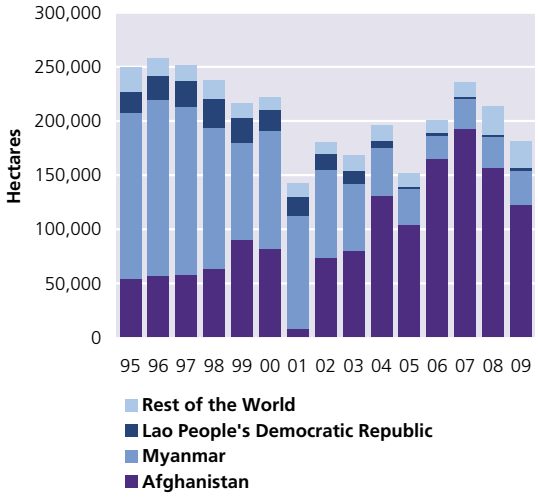
Cultivation

In 2009, the area under opium poppy cultivation decreased by 15% from 2008. Similar to the year before, this was mainly due to a large decrease in opium poppy cultivation in Afghanistan, which was not offset by increases in Myanmar and the Lao People's Democratic Republic. In Afghanistan, where in 2009 two thirds (66%) of global opium poppy cultivation were concentrated, cultivation continued to be concentrated mainly in the south and west of the country. Over half of the opium poppy area (57%) was located in only one province, Hilmand, although most of the decrease in cultivation from 2008 took place in the same province, in the so-called *food zone* where farmers were supported with wheat seeds and fertilizers. Almost the entire Afghan opium poppy-cultivating area was located in provinces characterized by high levels of insecurity. In 2009, eradication remained at the relatively low level of 2008. A preliminary assessment indicated that opium poppy cultivation in 2010 may remain at about the 2009 level.[1]

In Pakistan, Afghanistan's neighbour, the 2009 opium poppy cultivation remained at about the same level of less than 2,000 ha as in previous years. Myanmar, the second largest opium poppy cultivating country (17% of global cultivation) experienced the third consecutive yearly increase in cultivation, although the level remains much lower than in the 1990s and early 2000s. Most of the cultivation area was concentrated in the eastern part of the country (Shan State). Opium poppy cultivation in the Lao People's Democratic Republic remained at a low level of about 2,000 ha with no significant changes since 2005. Mexico remains the third largest cultivating country, showing a large increase in the area under opium poppy cultivation between 2007 and 2008.

Fig. 106: Global opium poppy cultivation (ha), 1995-2009

Note: The 2009 estimate for 'Rest of the world' is provisional as limited information was available for some countries and regions.
Source: UNODC



Reports on eradication of opium poppy and seizures of poppy plant material indicate the existence of illicit opium poppy cultivation in many other countries and

1 UNODC/Ministry of Counter Narcotics, *Afghanistan Opium Survey 2010. Winter Rapid Assessment*, February 2010.

Table 14: Global illicit cultivation of opium poppy and production of opiates, 1995-2009

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
CULTIVATION[a] IN HECTARES															
SOUTH-WEST ASIA															
Afghanistan [b]	53,759	56,824	58,416	63,674	90,583	82,171	7,606	74,100	80,000	131,000	104,000	165,000	193,000	157,000	123,000
Pakistan [c]	5,091	873	874	950	284	260	213	622	2,500	1,500	2,438	1,545	1,701	1,909	1,779
Subtotal	58,850	57,697	59,290	64,624	90,867	82,431	7,819	74,722	82,500	132,500	106,438	166,545	194,701	158,909	124,779
SOUTH-EAST ASIA															
Lao PDR [d]	19,650	21,601	24,082	26,837	22,543	19,052	17,255	14,000	12,000	6,600	1,800	2,500	1,500	1,600	1,900
Myanmar [e]	154,070	163,000	155,150	130,300	89,500	108,700	105,000	81,400	62,200	44,200	32,800	21,500	27,700	28,500	31,700
Thailand [f]	168	368	352	716	702	890	820	750							
Viet Nam [f]	1,880	1,743	340	442	442										
Subtotal	175,768	186,712	179,924	158,295	113,187	128,642	123,075	96,150	74,200	50,800	34,600	24,000	29,200	30,100	33,600
LATIN AMERICA															
Colombia [g]	5,226	4,916	6,584	7,350	6,500	6,500	4,300	4,153	4,026	3,950	1,950	1,023	715	394	356
Mexico [h]	5,050	5,100	4,000	5,500	3,600	1,900	4,400	2,700	4,800	3,500	3,300	5,000	6,900	15,000	n.a.
Subtotal	10,276	10,016	10,584	12,850	10,100	8,400	8,700	6,853	8,826	7,450	5,250	6,023	7,615	15,394	*15,394*
OTHER [i]															
Combined	5,025	3,190	2,050	2,050	2,050	2,479	2,500	2,500	3,074	5,190	5,212	4,432	4,184		
Other countries														8,600	*7,600*
TOTAL	**249,919**	**257,615**	**251,848**	**237,819**	**216,204**	**221,952**	**142,094**	**180,225**	**168,600**	**195,940**	**151,500**	**201,000**	**235,700**	**213,003**	***181,373***
POTENTIAL OPIUM PRODUCTION IN METRIC TONS [j]															
SOUTH-WEST ASIA															
Afghanistan [b]	2,335	2,248	2,804	2,693	4,565	3,276	185	3,400	3,600	4,200	4,100	6,100	8,200	7,700	6,900
Pakistan [c]	112	24	24	26	9	8	5	5	52	40	36	39	43	48	44
Subtotal	2,447	2,272	2,828	2,719	4,574	3,284	190	3,405	3,652	4,240	4,136	6,139	8,243	7,748	6,944
SOUTH-EAST ASIA															
Lao PDR [d]	128	140	147	124	124	167	134	112	120	43	14	20	9	10	11
Myanmar [e]	1,664	1,760	1,676	1,303	895	1,087	1,097	828	810	370	312	315	460	410	330
Thailand [f]	2	5	4	8	8	6	6	9							
Viet Nam [f]	9	9	2	2	2										
Subtotal	1,803	1,914	1,829	1,437	1,029	1,260	1,237	949	930	413	326	335	469	420	341
LATIN AMERICA															
Colombia [g]	71	67	90	100	88	88	80	52	50	49	24	13	14	10	*9*
Mexico [h]	53	54	46	60	43	21	91	58	101	73	71	108	149	325	n.a.
Subtotal	124	121	136	160	131	109	171	110	151	122	95	121	163	335	*335*
OTHER[i]															
Combined	78	48	30	30	30	38	32	56	50	75	63	16	15		
Other countries [k]														139	*134*
TOTAL	**4,452**	**4,355**	**4,823**	**4,346**	**5,764**	**4,691**	**1,630**	**4,520**	**4,783**	**4,850**	**4,620**	**6,610**	**8,890**	**8,641**	***7,754***
NON-PROCESSED OPIUM (l)										1,382	1,317	2,228	3,698	3,070	2,895
POTENTIAL MANUFACTURE OF HEROIN IN METRIC TONS [o]															
AVAIL. OUTSIDE AFGH. TOTAL [n]	**445**	**436**	**482**	**435**	**576**	**469**	**163**	**452**	**478**	**495** **529**	**472** **472**	**606** **629**	**735** **757**	**724** **752**	***634*** ***657***

(a) Opium poppy harvestable after eradication.
(b) Afghanistan, sources: before 2003: UNODC; since 2003: National Illicit Crop Monitoring System supported by UNODC.
(c) Pakistan, sources: ARQ, Government of Pakistan, US Department of State
(d) Lao PDR, sources: 1995: US Department of State; 1996-1999: UNODC; since 2000: National Illicit Crop Monitoring System supported by UNODC.
(e) Myanmar, sources: before 2001: US Department of State; since 2001: National Illicit Crop Monitoring System supported by UNODC.
(f) Due to continuing low cultivation, figures for Viet Nam (as of 2000) and Thailand (as of 2003) were included in the category "Other".
(g) Colombia, sources: before 2000: various sources, since 2000: Government of Colombia. Production: In Colombia, opium is produced as opium latex, which has a higher moisture content than opium produced in other regions of the world. The figures presented refer to dry opium. For 2008 and 2009, dry opium production in Colombia was calculated based on regional yield figures and conversion ratios from US Department of State/DEA.
(h) Figures derived from US Government surveys.The Government of Mexico reported a gross opium poppy cultivation of 19,147 hectares (2006) and estimated gross opium production at 211 mt (2006), 122 mt (2007), 144 mt (2008) and 162 mt (2009). These gross figures are not directly comparable to the net figures presented in this table. The Government of Mexico is not in a position to confirm the US figures as it does not have information on the methodology used to calculate them.
(i) Reports from different sources indicate that illicit opium poppy cultivation also exists in other countries and regions, including Algeria, the Baltic countries, Balkan countries, Egypt, Guatemala, Iraq, Lebanon, Peru, the Russian Federation and other C.I.S. countries, South Asia, Thailand, Ukraine, Venezuela, Viet Nam, as well as in Central Asia and the Caucasus region. Starting 2008, a new methodology was introduced to estimate opium poppy cultivation and opium/heroin production in these countries. This new series is listed unter "Other countries". The estimates are higher than the previous figures but have a similar order of magnitude. A detailed description of the estimation methodology is available in the online version of the World Drug Report 2010.
(j) Potential production refers to the amount of oven-dry opium with unknown morphine content that could be produced if all opium poppy cultivated in an area in one year was harvested in the traditional method of lancing the opium capsules and collecting the opium gum or latex.
(k) In some countries, poppy straw is used to produced acetylated opium rather than opium gum. However, for reasons of comparability, it was assumed that all opium poppy cultivation is used for opium gum production.
(l) This estimate represent the amount of opium, which remains opium and is not processed into morphine or heroin. It refers only to Afghan opium as for other countries, the amount of opium which is not processed into morphine or heroin could not be estimated. For years before 2004, no such estimate was available for Afghanistan.
(m) Since 2004: Potential heroin production available outside Afghanistan. Estimates for Afghanistan only include heroin and morphine available for export, i.e. after deducting local consumption and seizures, based on the Afghanistan Opium Surveys. The amount of Afghan opium estimated to remain available as opium is not included in this figure. For all other countries, it is assumed that all opium gets converted into heroin, disregarding the fact that some opium may be consumed as such or as morphine.
(n) This series contains all heroin potentially manufactured world-wide, including the heroin and morphine consumed and seized in Afghanistan. The amount of Afghan opium estimated to remain available as opium (potential opium, not processed) is not included in this figure.
(o) Potential manufacture refers to the amount of heroin of unknown purity that could be produced if the total potential opium production was converted into heroin, excluding the opium which is consumed as such and is not processed. Key informant surveys in Afghanistan indicated that 7 kg of air-dry opium are needed to manufacture 1 kg of brown heroin base of unknow purity. Typical purities found in seized heroin base in Afghanistan range from 50% to 80%. Assuming 10%-15% moisture content in air-dry opium, 7 kg of air-dry opium correspond to 6.0 to 6.3 of oven-dry opium. With the indicated typical base purity of 50% to 80%, between 7.4 kg and 12.6 kg of oven-dry opium would be needed to produce 1 kg of 100% pure heroin base in Afghanistan. A DEA study on heroin laboratory efficiency in Colombia estimated that indeed 8 kg of oven-dry opium were needed to produce 1 kg of 100% pure heroin HCl, corresponding to an overall laboratory efficiency of 67.2% from opium (latex) to heroin HCl. This suggests that the currently used ratios for oven-dry opium to heroin 7:1 (Afghanistan), 8:1 (Colombia in recent years) and 10:1 (rest of the world) could indeed provide an estimate of pure heroin production. However, the heroin estimates provided are still considered to refer to"heroin of unknown purity" as not enough is know about the laboratory efficiency in most producing countries.

Table 15: Reported opium poppy eradication in selected countries (ha), 1995-2009

* Although eradication took place in 2004, it was not officially reported to UNODC.
Source: ARQ, Government reports, reports of regional bodies, INCSR

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Afghanistan					400	121			21,430	*	5,103	15,300	19,047	5,480	5,351
Colombia	3,466	6,885	6,988	2,901	8,249	9,254	2,385	3,577	3,266	3,866	2,121	1,929	375	381	546
Egypt								15	34	65	45	50	98	121	
Guatemala											489	720	449	536	1,345
India			29	96	248	153	18	219	494	167	12	247	8,000	624	2,420
Lao PDR									4,134	3,556	2,575	1,518	779	575	651
Lebanon									4	67	27		8		
Mexico	15,389	14,671	17,732	17,449	15,461	15,717	15,350	19,157	20,034	15,926	21,609	16,890	11,046	13,095	11,471
Myanmar	3,310	1,938	3,093	3,172	9,824	1,643	9,317	7,469	638	2,820	3,907	3,970	3,598	4,820	4,087
Nepal								19	19			1		21	35
Pakistan		867	654	2,194	1,197	1,704	1,484		4,185	5,200	391	354	614	0	16
Peru				4	18	26	155	14	57	98	92	88	88	23	32
Thailand	580	886	1,053	716	808	757	832	989	767	122	110	153	220	285	201
Venezuela (Bolivarian Rep. of)	148	51	266	148	137	215	39	0	0	87	154	0	0	0	
Viet Nam	477	1,142	340	439		426		125	100	32			38	99	45

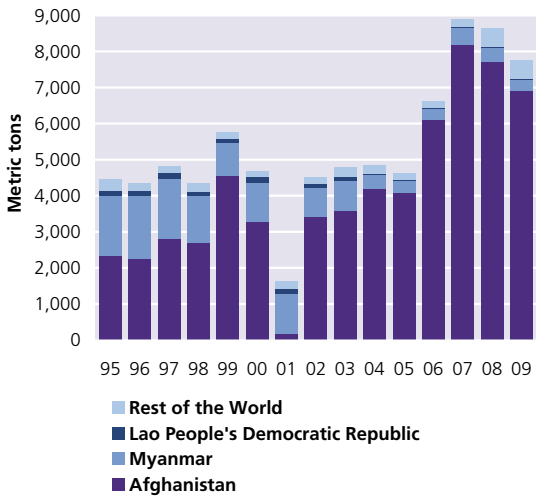
regions.[2] In countries where information was available on eradication and seizures of opium poppy plants but not on the area under cultivation between 2003 and 2009, a methodology was developed to estimate opium poppy cultivation. This indirect method does not allow for individual country estimates, but can provide an estimate of the total level of opium cultivation in this residual group of countries which for 2009 amounted to 7,600 ha, equivalent to 4% of global cultivation. A detailed description of the estimation methodology is included in the methodology chapter, available on the UNODC website at www.unodc.org/wdr.

Production

In 2009, global potential opium production was estimated at 7,755 mt, a decrease by 10% from 2008. Over one third (37%) was estimated to be available on the drug market as opium, the remainder being converted into morphine and heroin. This would correspond to a potential heroin production of 657 mt. This is the second consecutive decrease since 2007, when global opium production reached a peak of 8,890 mt, with an estimated potential heroin production of 757 mt.

Fig. 107: Global potential opium production (mt), 1995-2009

Note: The 2009 estimate for 'Rest of the world' is provisional as limited information was available for some countries and regions.
Source: UNODC



Opium yields in Afghanistan remained very high in 2009. The potential opium production was estimated at 6,900 mt. About 56% of the total opium production was estimated to be potentially exported as morphine and heroin, corresponding to 548 mt in heroin equiva-

2 Without detailed information on the circumstances of poppy straw seizures, the seizure as such is not proof of illicit opium poppy cultivation. The material could be diverted from licit cultivation or originate from another country. Between 2003 and 2009, on average 18 countries/territories reported eradication and/or seizures of opium poppy, suggesting the existence of opium poppy cultivation, among them: Algeria, Argentina, Armenia, Australia, Austria, Bangladesh, Belarus, Costa Rica, Ecuador, Egypt, Estonia, Guatemala, India, Japan, Kazakhstan, Kyrgyzstan, Latvia, Lebanon, Lithuania, the former Yugoslav Republic of Macedonia, the Republic of Moldova, Nepal, Norway, Peru, Poland, Romania, the Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, the Bolivarian Republic of Venezuela, Viet Nam and the Palestinian Territory. Source: UNODC ARQ and IDS, US State Department, International Narcotics Control Strategy Report (INCSR).

lent.[3] Afghanistan remained by far the largest opium-producing country, representing 89% of the global illicit opium production. Despite the increase in cultivation, opium production in Myanmar decreased by 20% to only 330 mt, due to lower yields.

Laboratories

Only eight countries reported destruction of clandestine opiate-processing laboratories in 2008. In addition to countries where opium production takes place, such as Afghanistan (69 laboratories), Myanmar (5), Mexico (1) and Peru (1), destruction of clandestine opiate processing laboratories were reported from Belarus (1), Greece (2), New Zealand (1) and the Russian Federation (1). Much higher numbers were reported in 2007 (639). However, most of these laboratories were small-scale kitchen laboratories reported by the Russian Federation, many of which produced acetylated opium from poppy straw, which is commonly consumed in this subregion only. It can be assumed that most heroin production still occurs in countries where opium poppy is cultivated or in their close proximity.

Precursor chemicals

Illicit morphine and heroin production requires large quantities of precursor chemicals such as acetic anhydride, a substance which is essential in the refinement of morphine to heroin. All acetic anhydride used for heroin production in Afghanistan has to be smuggled into the country as no known production facilities of the substance exist in the country nor is there any reported legitimate use of this chemical.[4]

Large amounts of acetic anhydride seizures were reported in 2008, mainly from European and Western Asian countries (Afghanistan, Pakistan, the Syrian Arab Republic and Turkey), totalling 199,344 litres (57,308 l in 2007).[5] Large amounts were also seized in East and South-East Asia (China, the Republic of Korea and Myanmar). In South America, Colombia regularly reports seizures of acetic anhydride. Increased international control and cooperation helped to prevent the diversion of large amounts of precursors. The seizures and related information confirmed that large-scale trafficking of morphine and heroin precursors to Afghanistan and neighbouring countries occurred but also to other opium producing countries. The controls in place seem to have led to a high price level of acetic anhydride in Afghanistan (US$350/l – US$400/l), which is thought to have become a major cost factor in the production of heroin.[6]

3 A detailed description of the methodology of the Afghanistan opium and heroin estimates can be found in UNODC/Government of Afghanistan (Ministry of Counter Narcotics), *Afghanistan Opium Survey 2009*, December 2009.

4 Information on precursor seizures stems mainly from the International Narcotics Control Board, E/INCB/2009/1.

5 The total reported seizure amount does not include seizures from Afghanistan, which were not officially reported to the INCB. Seizures were reported to UNODC by Afghan authorities, at 14,234 l of acetic anhydride in 2008.

6 UNODC/Ministry of Counter Narcotics, *Afghanistan Opium Survey 2009*, December 2009.

2.2.2 Seizures

In 2008, seizures of opium continued to increase steadily, together with heroin seizures, which rose for the second consecutive year, albeit less sharply. In contrast, morphine seizures continued the declining trend which started in 2007. Although heroin seizures have followed a generally increasing trend since 2002, they have been clearly outpaced by growth in global opium seizures. This is mainly due to the contribution of the Islamic Republic of Iran, which has registered increases in both heroin and opium seizures, accounting for an overwhelming proportion of global opium seizures.

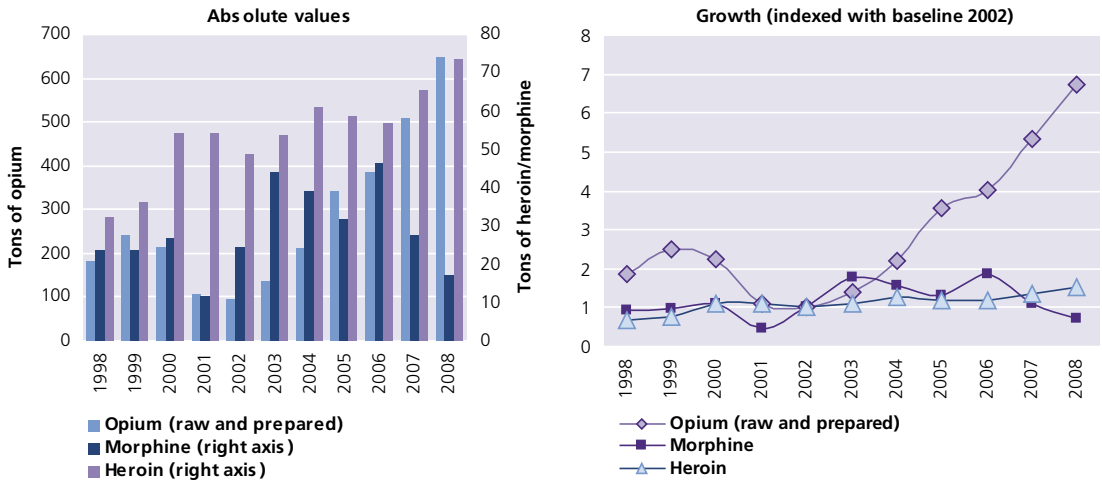
Globally, interdiction of opium is concentrated in the area around Afghanistan, while seizures of processed heroin are far more geographically dispersed. Not surprisingly, the closer the substance is to the final product (heroin), the more ubiquitous it becomes. Moreover, opium consumption is to be found mainly in the Near and Middle East/South-West Asia.

Total heroin seizures are driven by various factors, including law enforcement efforts, as well as the global supply of heroin, which in turn depends on the global production of heroin and opium. However, global heroin seizures tend to respond to changes in production levels with a longer time lag than opium as a result of the time taken to process the opium into heroin and to traffic it. Therefore, the effect of production on seizures is visible later, and may also be less pronounced. The distinction can be observed, for example, in the sharp decline of opium production in 2001, which resulted in a sharp drop in opium seizures the same year, and in a much less pronounced decline in heroin the following year. Over the period 2001-2008, heroin seizure totals were more strongly correlated with opium production estimates in the previous year, while in the case of opium, the best correlation is observed with the average opium production in the current and previous years. This suggests that the interception rate for heroin can be best assessed if calculated by comparing global seizures with the production estimated for the year before.

The difficulties in calculating the global heroin interception rate are further compounded by the necessity to adjust for purity in heroin production estimates[7] as well as heroin seizures – a complication which does not arise in the case of opium.

Fig. 108: Global opiate seizures, 1998-2008

Source: UNODC ARQ/DELTA



7 The available heroin production estimates refer to heroin of unknown purity.

Fig. 109: Distribution of opiate seizures worldwide (percentage), 2008

* The category "Other" refers to a different set of countries according to the drug type.
Source: UNODC ARQ/DELTA

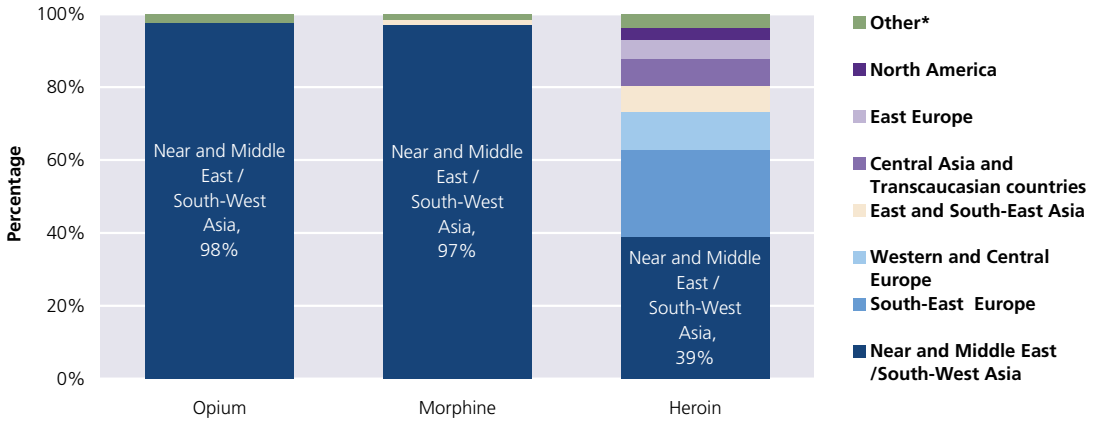
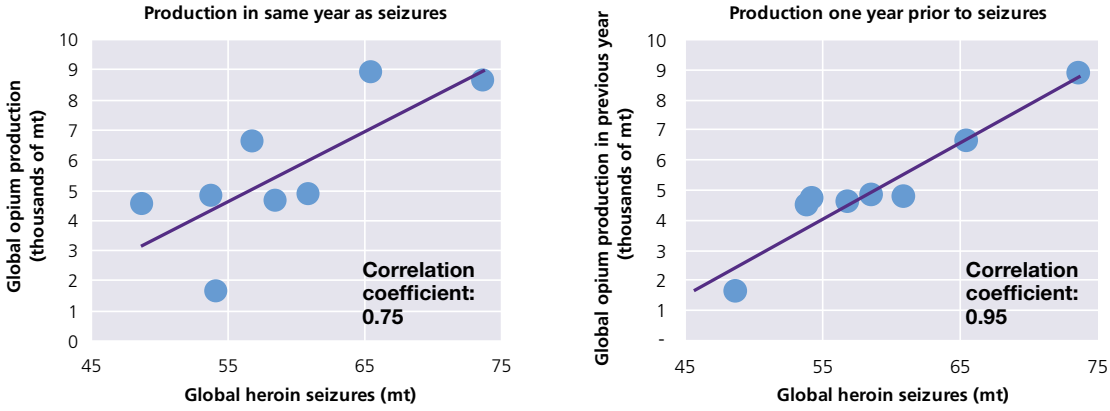


Fig. 110: Correlation of global heroin seizures with total opium production, 2001-2008

Source: UNODC ARQ/DELTA (seizure data), UNODC (production estimates)



The interception rate for opium[8] rose slightly in 2008, from 17% in 2007 to 19%. On the other hand, the ratio of the other opiate seizures (heroin and morphine) to estimated potential heroin production in the previous year dropped from 15% in 2007 to 12% in 2008.[9]

Opium

Global opium seizures have risen steadily for six consecutive years, from 95.7 mt in 2002 to almost seven times more - 646 mt - in 2008, equivalent to consistent annual increases of 37%. The growth has mainly been driven by the quantities seized in the Islamic Republic of Iran, which continues to report by far the largest opium seizures worldwide. Most of the remaining seizures happened in Afghanistan and Pakistan. These three countries together accounted for more than 97% of global seizures in 2007 and 2008.

Every year from 1996 to 2008, the Islamic Republic of Iran accounted for more than two thirds of annual global opium seizures. For six consecutive years, increasing quantities of opium were seized in this country (from 73 mt in 2002 to 561 mt in 2008), setting the trend for the global total. According to preliminary data, in 2009 seizures stabilized, standing at 579 mt.[10]

8 Calculated as the ratio of global opium seizures in a given year to the estimated global supply of opium not processed into heroin or morphine. The supply is estimated by the average of production in the given year and the preceding year.

9 In previous years, UNODC estimated a single interception rate for opiates, which expressed total opiate seizures in a given year, converted into heroin equivalents, as a percentage of potential heroin production (excluding, since 2004, seizures and consumption in Afghanistan) in the same year.

10 Islamic Republic of Iran, Drug Control Headquarters, *Drug Control*

Fig. 111: Comparison of global opiate seizures with global production estimates

Source: UNODC ARQ/DELTA (seizure data), UNODC (production estimates)

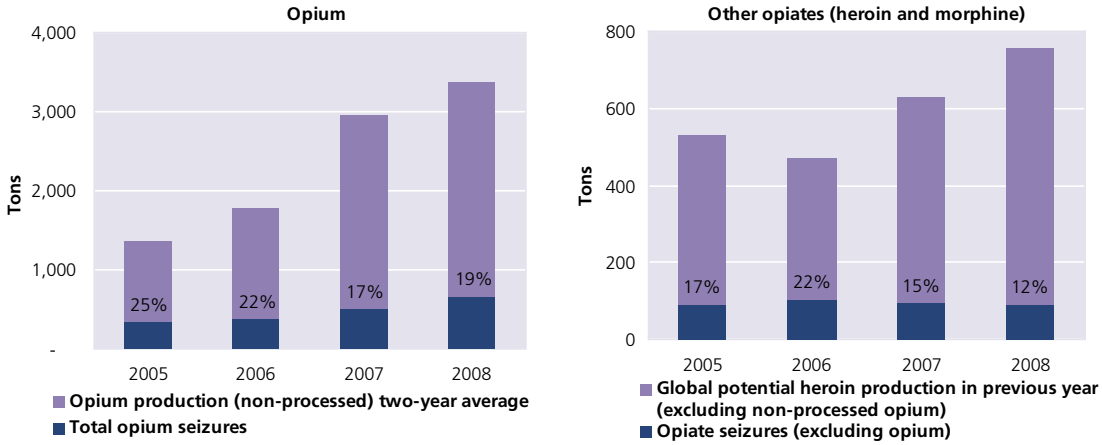
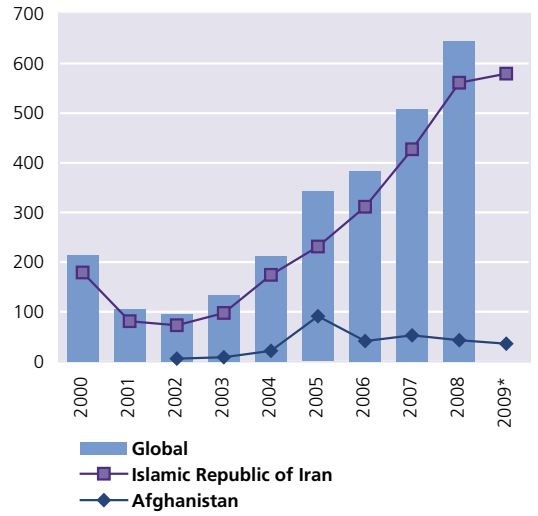


Fig. 112: Opium seizures in Afghanistan, Islamic Republic of Iran and worldwide (mt), 2000-2009

* Data for 2009 for the Islamic Republic of Iran are preliminary
Source: UNODC ARQ/DELTA



Opium seizures in Afghanistan fell from 52.5 mt in 2007 to 42.8 mt[11] in 2008. Given the large amounts of opium being produced in Afghanistan, these levels imply a disproportionately low seizure rate. Based on data gathered by UNODC, in 2008, opium seizures mainly took place in the provinces of Hilmand (20.8 mt), Nangarhar (9.8 mt), Kandahar (4.1 mt) and Hirat (3.4 mt). Afghanistan reported seizures of 35.7 mt in 2009. However, this may not include seizures made by international forces in collaboration with Afghan forces - in the first half of 2009 only, military operations seized 50 mt of opium.[12]

In line with the trend in the Islamic Republic of Iran, opium seizures in Pakistan rose more than tenfold over the period 2004-2008, from 2.5 mt in 2004 to 27.2 mt in 2008. Pakistan also reported seizures of 6.9 mt of opium poppy straw in 2007, and more than 10 times this quantity – 81.7 mt – in 2008.

Morphine

For the second consecutive year, in 2008, global morphine seizures fell by more than one third, dropping from 27.4 mt in 2007 to 17.3 mt. The decline over the 2006-2008 period was mainly due to a notable downward trend in Pakistan. Seizures of morphine in Pakistan fell sharply in 2007, from 32.7 mt in 2006 to 11.0 mt, and even further in 2008, to 7.3 mt – the lowest level since 2002. The downward trend was in sharp contrast with increasing opium seizures in the same country.

In 2008, the largest quantity of morphine was seized by the Islamic Republic of Iran, where seizures amounted to 9.0 mt,[13] essentially stable at the 2007 level (9.7 mt). However, according to preliminary data,[14] in 2009, seizures almost doubled, rising to 16.1 mt.

in 2009.

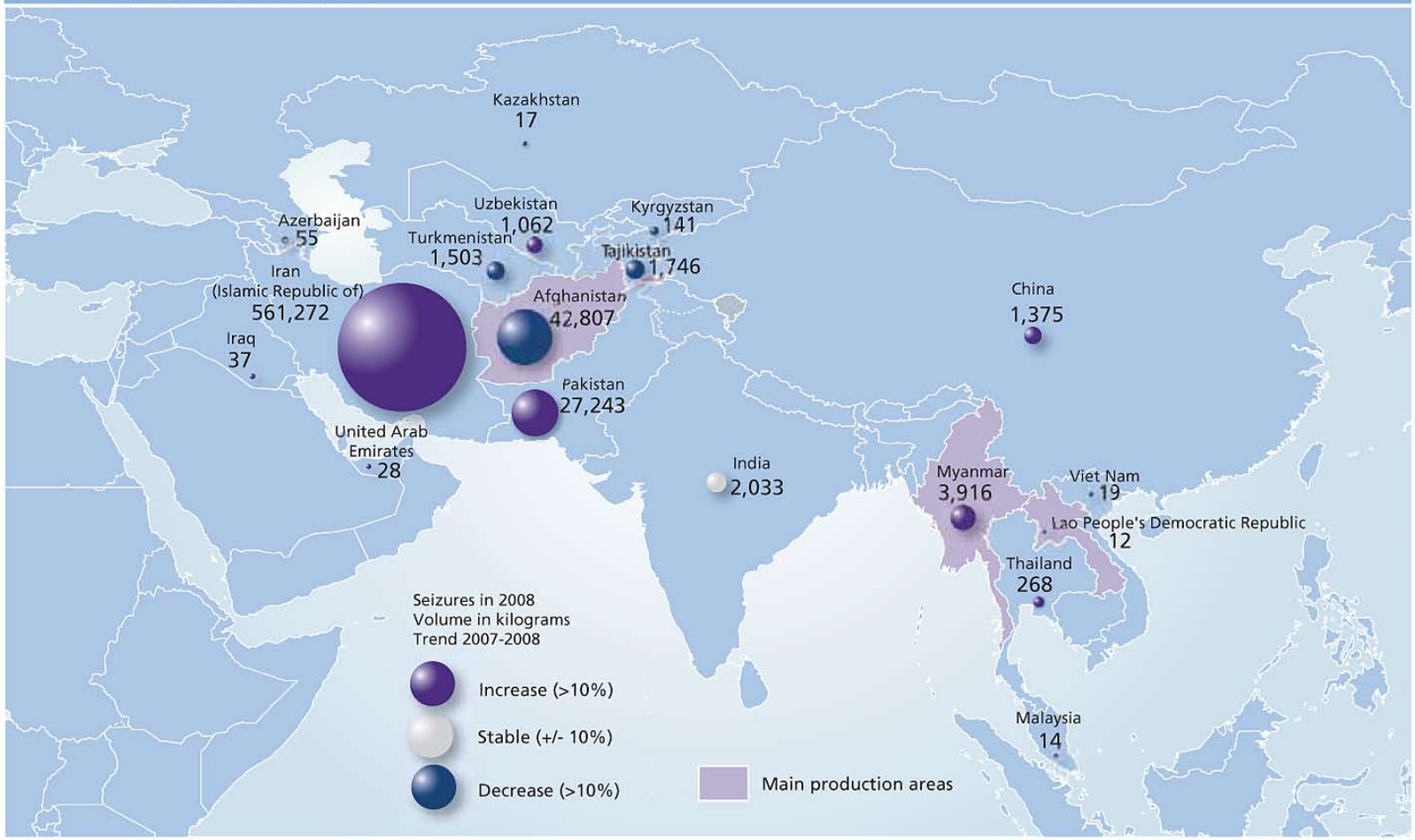
11 UNODC Afghanistan country office.

12 UNODC/Government of Afghanistan (Ministry of Counter Narcotics), *Afghanistan Opium Survey 2009,* December 2009.

13 Islamic Republic of Iran, Drug Control Headquarters, *Drug Control in 2009.*

14 Ibid.

Map 14: Opium seizures in Asia, 2008



Source: UNODC Annual Reports Questionnaires data supplemented by other sources
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Fig. 113: Global morphine seizures, 2003-2009

* Data for 2009 for the Islamic Republic of Iran are preliminary.
Source: UNODC ARQ/DELTA

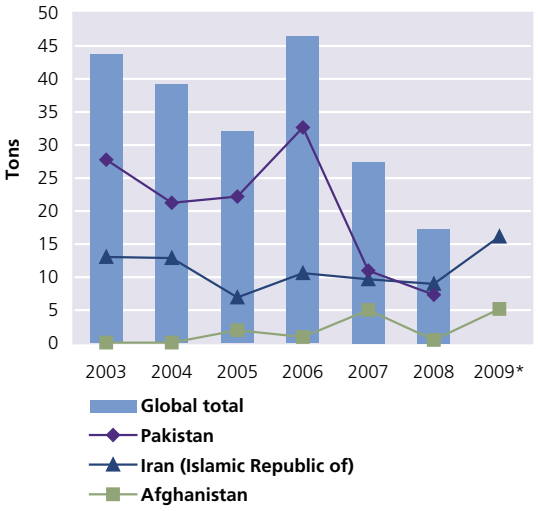


Fig. 114: Comparison of morphine and opium seizure trends in Pakistan (mt), 2004-2008

Note: Data are presented for the purposes of a comparison of trends over time, not quantities, across different drug types. In no sense should 1 ton of opium be considered equivalent to 1 ton of morphine (in particular not in terms of potential heroin manufacture).
Source: UNODC ARQ/DELTA

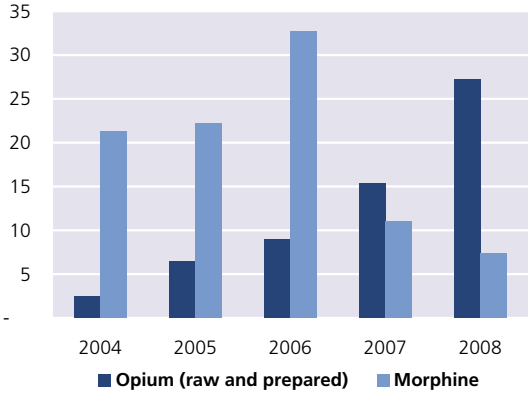


Fig. 115: Global heroin seizures, 1998-2008

Source: UNODC ARQ/DELTA

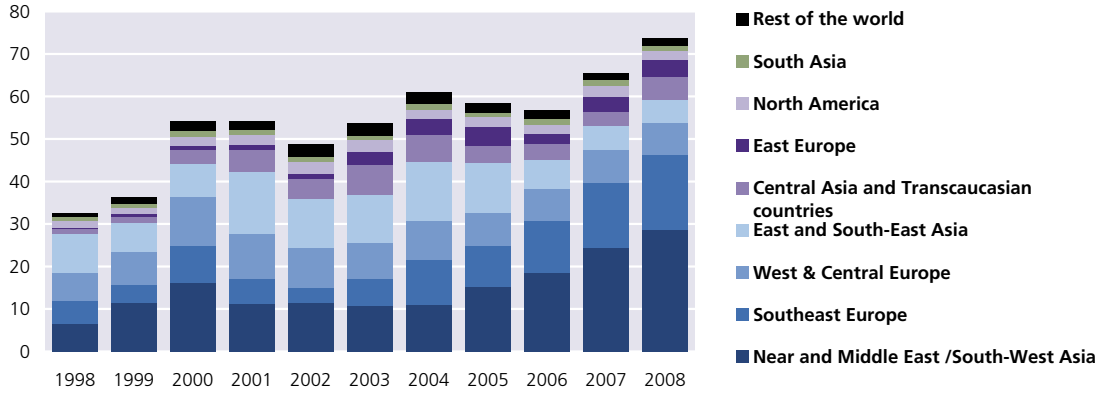
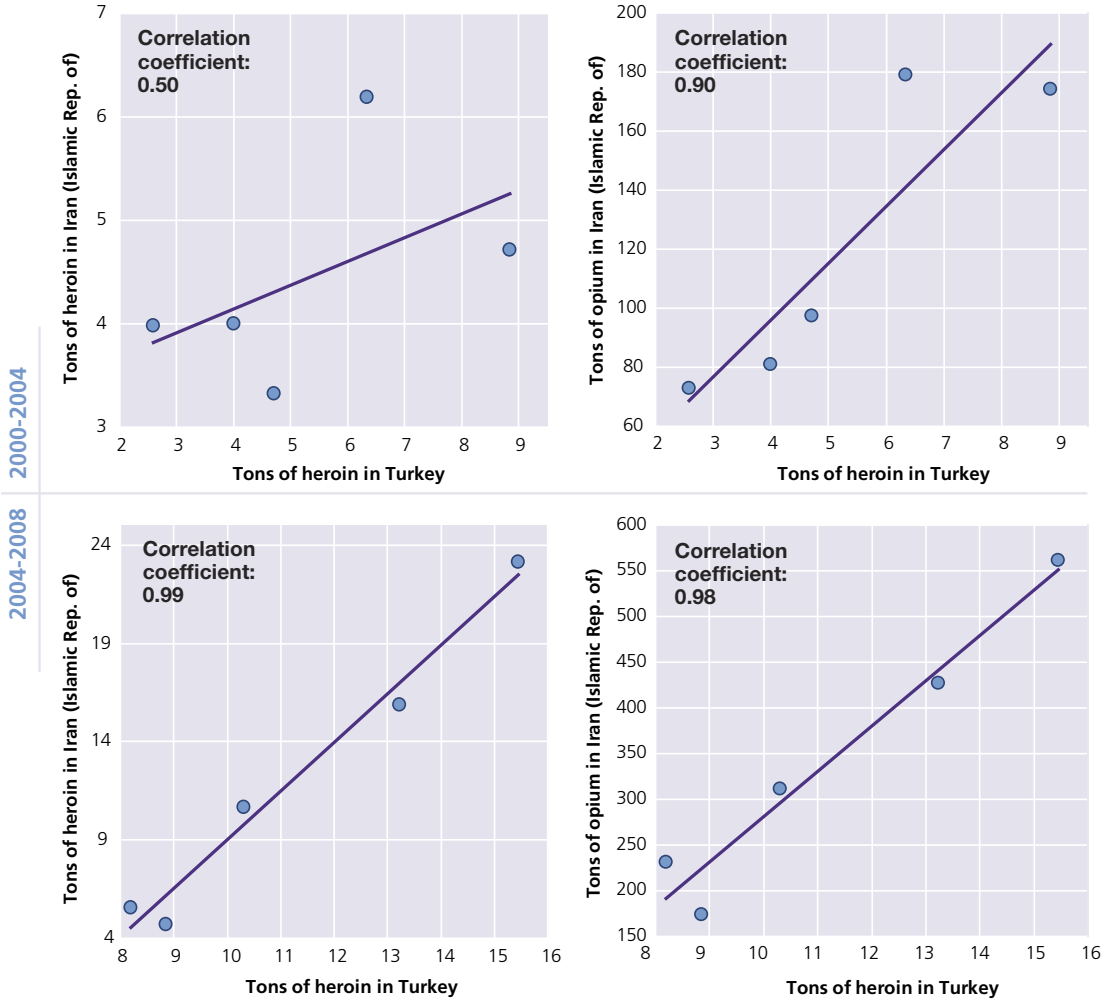


Fig. 116: Correlation of heroin seizures in Turkey with opium and heroin seizures in the Islamic Republic of Iran, 2000-2004 and 2004-2008

Sources: UNODC ARQ/DELTA



Heroin

In 2008, global heroin seizures reached a record level of 73.7 mt, up from 65.5 mt in 2007, registering the second consecutive year-on-year increase. Heroin seizures remained much less geographically concentrated than seizures of opium and morphine, with large quantities of heroin being seized in the subregion of the Near and Middle East/South-West Asia (39% of the global total), South-East Europe (24%), West and Central Europe (10%), East and South-East Asia (7.3%), Central Asia and Transcaucasian countries (7.3%), East Europe (5.4%) and North America (3.1%).

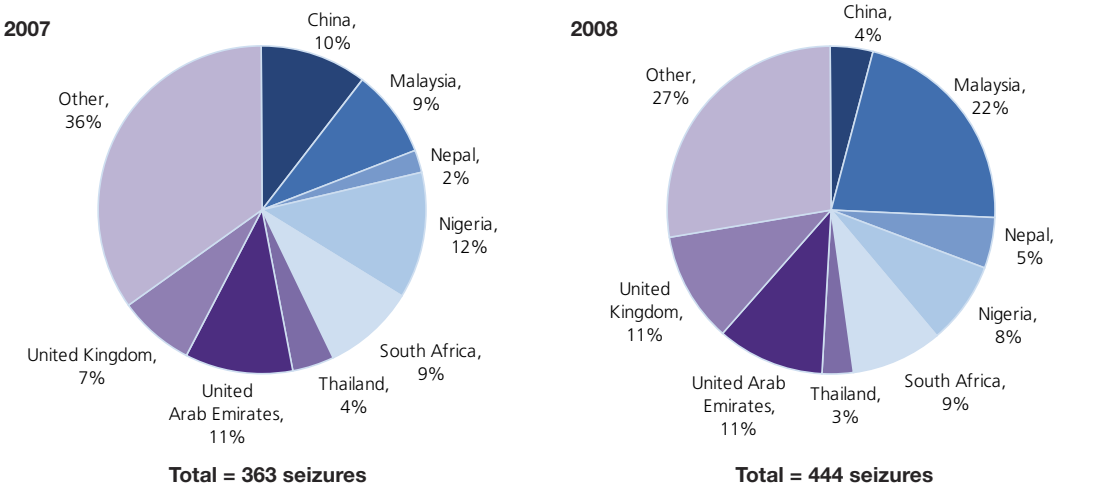
The global increase in heroin seizures over the 2006-2008 period was driven mainly by continued burgeoning seizures in the Islamic Republic of Iran and Turkey. In 2008, these two countries accounted for more than half of global heroin seizures, and registered, for the third consecutive year, the highest and second highest seizures worldwide, respectively. By 2008, heroin seizures in the Islamic Republic of Iran had climbed to 23.1 mt.[15] According to preliminary data, in 2009 heroin seizures may have stabilized, amounting to 23.4 mt.[16] In Turkey, seizures rose from 13.2 mt in 2007 to 15.4 mt in 2008.

15 Islamic Republic of Iran, Drug Control Headquarters, *Drug Control in 2009.*

16 Ibid.

Fig. 117: Destination of heroin seizure cases reported by Pakistan, 2007 and 2008

Source: UNODC Individual Drug Seizures database



Turkey remained a major gateway for heroin destined for West and Central Europe. A comparison of heroin seizures in Turkey with opiate seizures in the neighbouring Islamic Republic of Iran reveals notable patterns. Over the 2000-2004 period, heroin seizures in Turkey were more strongly correlated with opium seizures than with heroin seizures in the Islamic Republic of Iran, suggesting that the supply of heroin in Turkey was sourced to a significant extent from opium transiting the Islamic Republic of Iran. In contrast, over the 2004-2008 period, the correlation was remarkably strong with both heroin and opium seizures in the Islamic Republic of Iran, and the discrepancy could no longer be observed, thus making it plausible that traffickers in the two countries were ultimately drawing from a common supply of heroin.

Following a significant decline over the 2004-2007 period, heroin seizures in China appeared to stabilize in 2008, amounting to 4.3 mt in 2008, only slightly less than the level in 2007 (4.6 mt). China reported that West African (especially Nigerian) syndicates were trafficking large quantities of heroin, as well as methamphetamine, to China, especially through Guangdong province.

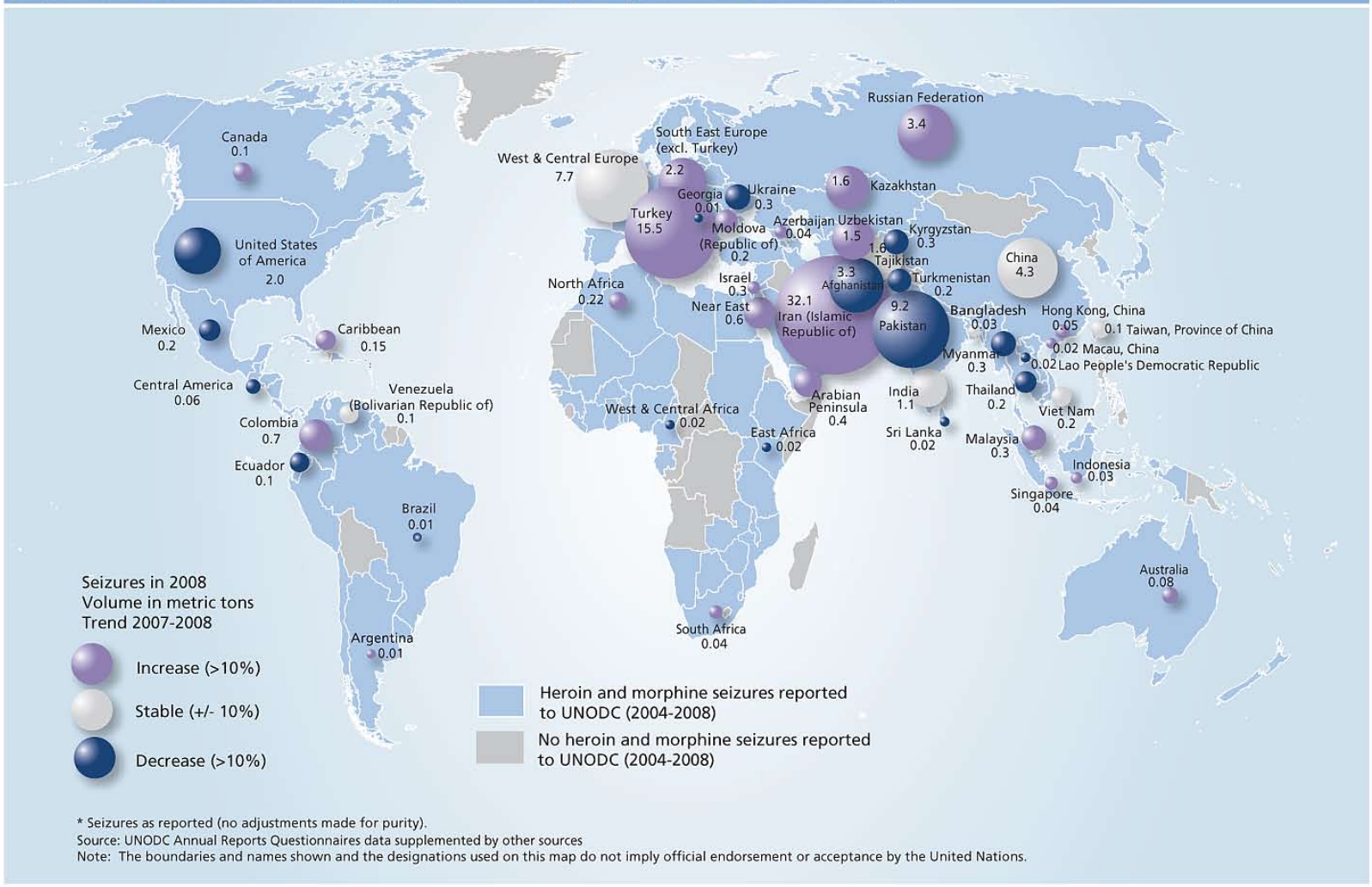
Heroin seizures fell both in Afghanistan, from 5.0 mt[17] in 2007 to 2.8 mt[15] in 2008, and in Pakistan, from 2.9 mt in 2007 to 1.9 mt in 2008 – the lowest level in Pakistan since 1981. On the other hand, in 2008 seizures reached the highest levels on record in Uzbekistan (1.5 mt) and Kazakhstan (1.6 mt), while remaining essentially stable in Tajikistan (1.6 mt).

Further indications of changing trafficking patterns in Pakistan can be observed from an analysis of significant individual heroin seizures reported by this country. Among those cases in which a country other than Pakistan was identified as the destination, the proportion of consignments intended for Malaysia had never exceeded 1% prior to 2006. In contrast, this proportion rose to 9% in 2007 and 22% in 2008. Similarly, the proportion of consignments intended for China had never exceeded 1% prior to 2005, but rose to 28% in 2006. However, this proportion then declined to 10% in 2007 and 4% in 2008.

In West and Central Europe, heroin seizures remained stable for the second year in a row, at 7.7 mt in 2008. Seizures in the Russian Federation rose in 2007, from 2.5 mt in 2006 to 2.9 mt, and again in 2008, to 3.4 mt. Seizures in the United States fell from 2.4 mt in 2007 to 2.0 mt in 2008, nevertheless remaining higher than the level in 2005 and 2006 (1.7 mt).

17 UNODC Afghanistan country office.

Map 15: Seizures of heroin and morphine, 2008 (countries reporting seizures* of more than 10 kg)



* Seizures as reported (no adjustments made for purity).
Source: UNODC Annual Reports Questionnaires data supplemented by other sources
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

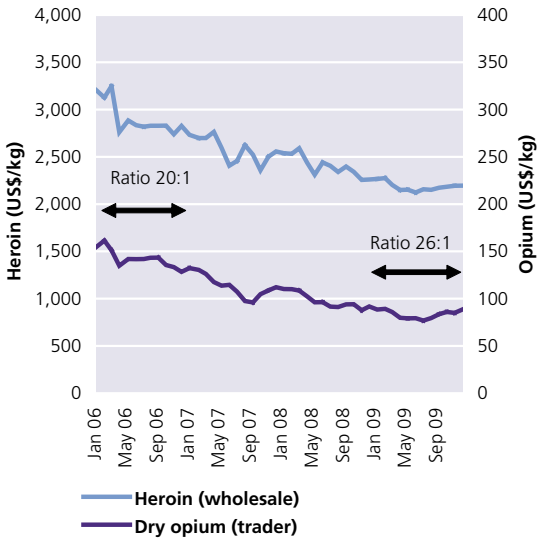
2.2.3 Prices

Opium farm-gate prices and opium production

Both heroin (wholesale) and opium (farm-gate) prices in Afghanistan have decreased noticeably over the last years, but not at the same speed. A comparison between the two price trends reveals that the ratio of heroin to opium prices between 2006 and 2009 has indeed increased, as opium prices were falling more rapidly than heroin prices. Without knowing the composition and purity of the heroin sold at the reported prices this trend is difficult to interpret. Potentially, a large ratio could indicate a larger profit margin for drug traffickers involved in heroin production. On the other hand, prices for precursors seemed to have reached a very high level in 2009, when acetic anhydride, a key element of the conversion process, was sold at US$350 to US$400 per litre. Thus, the high prices for inputs could (partly) be compensated by paying less for opium, as the market did not allow an increase in heroin prices. Another possible explanation is that the quality of the opium (morphine content) is lower and more opium is needed to produce the same amount of heroin.

Fig. 118: Afghanistan, wholesale opium and heroin price, 2006-2009

Source: UNODC ARQ



The declining opium prices in Afghanistan are not always mirrored by price trends in neighbouring countries. As one can expect, opium price levels in neighbouring countries are higher than in Afghanistan, as a result of transport costs and risk premiums. The opium wholesale price in Peshawar, Pakistan, seems to best reflect price developments in Afghanistan whereas opium price trends in the Islamic Republic of Iran and Tajikistan seem to be subject to additional factors.

Farm-gate prices of opium in Afghanistan have been on the decline in recent years, reflecting production increases in Afghanistan and a high level of global opium production, to which Afghanistan is the main contributor. The price decline was steepest in years of large production increases in Afghanistan and has ebbed off since 2008, despite a decline in production, probably reflecting the still very high level of global opium production since 2006 and the existence of opium stocks.

Prices in Colombia, where prices refer to opium latex which has a higher moisture content than opium gum, are not directly comparable to prices in Afghanistan and Myanmar, where they refer to air-dried opium gum. Converted into air-dried opium equivalents, per kilo prices in Colombia would roughly be double to triple the price in Myanmar, which is already far higher than the price in Afghanistan. Two observations can be made: First, farm-gate prices of opium in Myanmar, the second largest opium producing country, and in Colombia, which has a small but regionally important production, showed constant increases over the last five years and do not reflect the strong increase in global opium production. Second, price levels differ strongly in these three regions, with Afghanistan having the lowest prices, Myanmar a price level five times higher than Afghanistan, and Colombia (in dry opium equivalents about US$930/kg) about three times higher than Myanmar or 15 times higher than Afghanistan. The opium prices in Colombia are close to the opium price levels observed in Thailand and the Lao People's Democratic Republic of over US$1,000/kg since 2008.

The disconnect between farm-gate prices and global production trends supports the hypothesis of the existence of separate regional markets, where prices reflect the local/regional rather than global opium production levels and trends.

Fig. 119: Opium prices in South and Central Asia (US$/kg), 2006-2009

Source: National monitoring systems supported by UNODC in Afghanistan, Governments of the Islamic Republic of Iran and Tajikistan

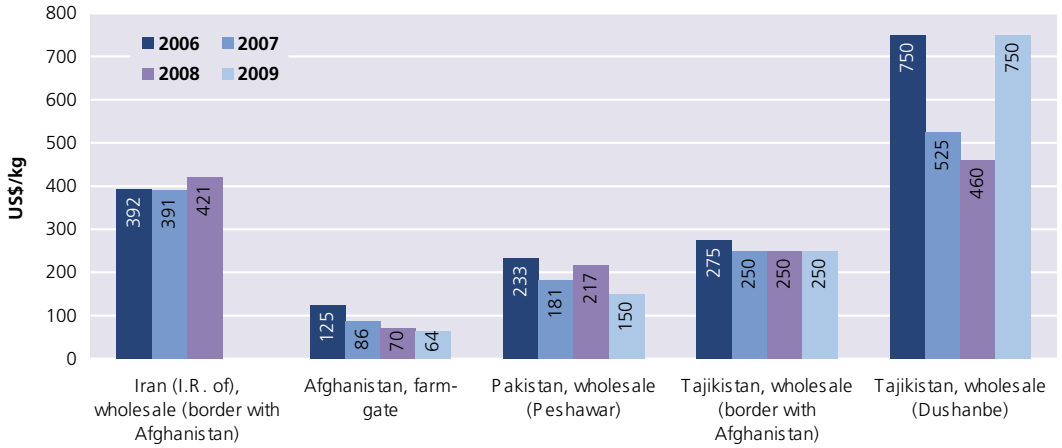


Fig. 120: Opium prices in Afghanistan, Colombia and Myanmar, 2004-2009

Source: National monitoring systems supported by UNODC in Afghanistan and Myanmar, DIRAN/Government of Colombia

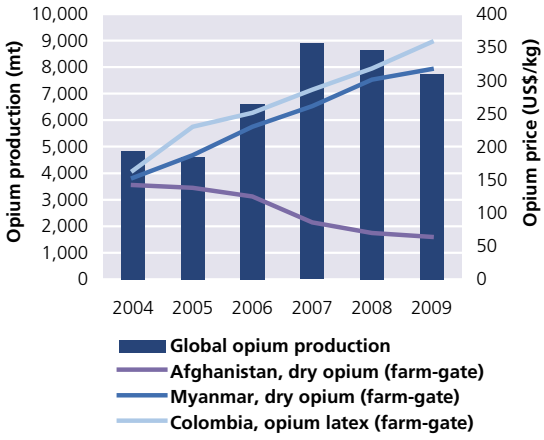
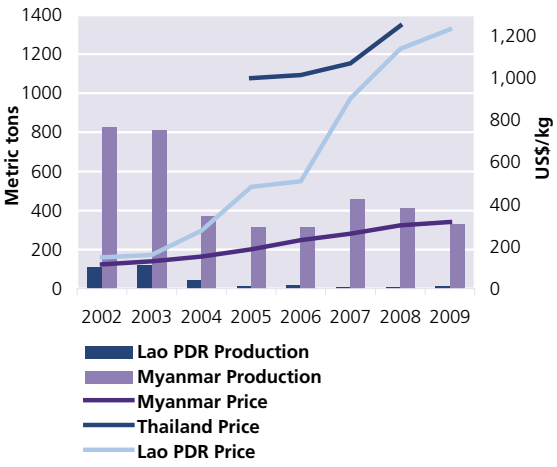


Fig. 121: Opium production and prices in cultivating areas in Lao People's Democratic Republic, Myanmar and Thailand, 2002-2009

Source: National monitoring systems supported by UNODC in Lao People's Democratic Republic and Myanmar, Government of Thailand



Heroin wholesale and retail prices

Wholesale prices of heroin (not adjusted for purity) follow the well-known trafficking routes from South-West Asia to Europe, and from South America and Mexico to the United States and Canada. In 2008, wholesale prices ranged from US$2,400 per kg in Afghanistan to US$10,300-US$11,800 per kg in Turkey and an average of US$44,300 per kg in West and Central Europe. In the Americas, a largely self-sufficient market for heroin, prices ranged from US$10,000 per kg in Colombia to US$45,000-US$70,000 per kg (for heroin of South American origin) in the United States and US$119,000 per kg in Canada. The price in Mexico, US$35,000 per kilogram, is possibly influenced by two contrasting factors – the proximity to the consumer market of the United States, which can arguably raise the price, and the local production of heroin in Mexico,[18] which would be expected to lower the price.

Over the 2005-2008 period, heroin retail prices in key European markets, when adjusted for purity and inflation, displayed a marked sensitivity to the wholesale price in Turkey, confirming the role of this country as a

18 Mexico is also believed to be a transit point for heroin from South America to the United States.

Fig. 122: Heroin wholesale prices (not adjusted for purity) in Africa, Asia and Europe, 2008

* Average of reported minimum and maximum prices. ** Simple average.
Source: UNODC ARQ

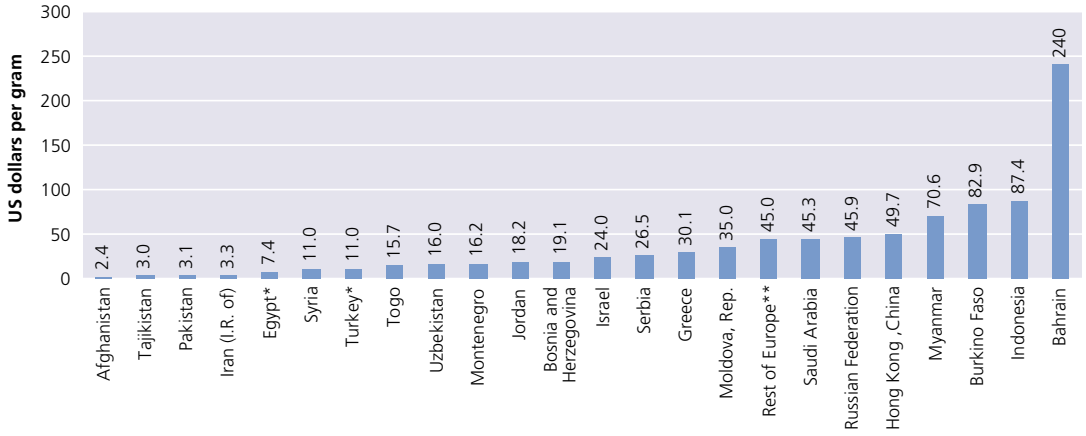


Fig. 123: Heroin wholesale prices (not adjusted for purity) in the Americas, 2008

* Average of reported minimum and maximum prices. ** Tar (Mexican origin). *** South American origin.
Source: UNODC ARQ

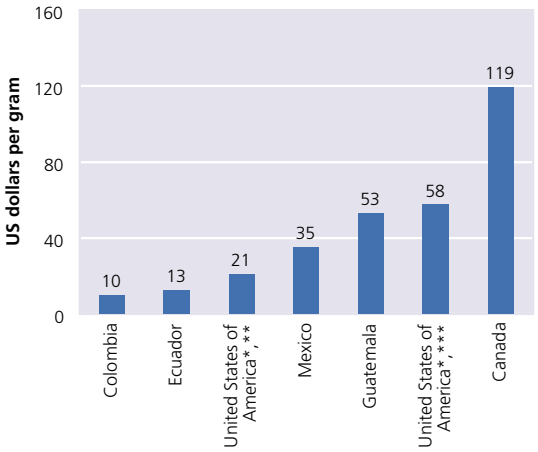
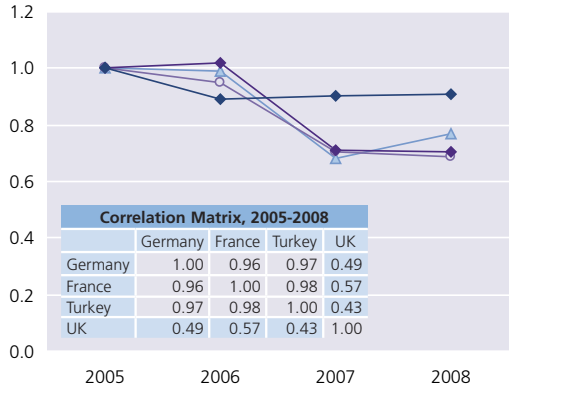


Fig. 124: Trends in purity- and inflation-adjusted heroin prices in selected European countries, 2005-2008 (indexed, baseline 2005)

* France did not register a variation in purity over the period 2005-2008. Note: purity-adjusted prices are UNODC estimates based on reported prices and purities.
Source: UNODC ARQ, Europol, *World Drug Report 2009*



Correlation Matrix, 2005-2008

	Germany	France	Turkey	UK
Germany	1.00	0.96	0.97	0.49
France	0.96	1.00	0.98	0.57
Turkey	0.97	0.98	1.00	0.43
UK	0.49	0.57	0.43	1.00

major gateway for heroin entering Europe. A notable exception was the United Kingdom, where the adjusted price remained largely stable. This may reflect the different trafficking patterns for heroin reaching the United Kingdom, as opposed to continental Europe.[19]

In the United States, high wholesale purity and low prices, as well as other indicators, suggest that heroin remains widely available in the country, and that the availability is increasing in some areas. Moreover, the results of the Heroin Signature Program (HSP) of the US Drug Enforcement Agency point to an increase in the availability of heroin from Mexico. The wholesale purity of heroin of Mexican origin was at its highest (40%) since 2005, while Mexican heroin represented 39% (by weight) of all heroin analysed through the HSP, the highest percentage since 1987.[20]

19 The United Kingdom assessed that, in 2008, 25% of the heroin in its market was trafficked from Pakistan, as opposed to the Balkan route. Other factors may also distinguish the UK market from continental Europe.

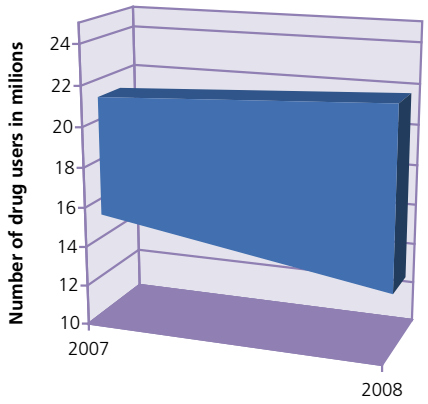
20 National Drug Intelligence Center, United States Department of Justice, *National Drug Threat Assessment 2010*, February 2010.

2.2.4 Consumption

In 2008, UNODC estimates that between 12.8 and 21.9 million people globally used opiates over the past 12 months, with the prevalence ranging between 0.3% and 0.5% of the world's population aged 15-64. The range of the estimated prevalence did not change from 2007, but the range of the lower bound of the estimated number of annual users decreased, reflecting an increased uncertainty in South Asia and Africa, but also a possible decrease in the total number of users observed, particularly in Europe. More than half of the estimated opiate users are in Asia. Despite significant growth in the production of opiates in recent years, global consumption remains relatively stable, as also perceived by national experts.

Fig. 125: World annual opiates users

Source: UNODC ARQ



Opiate consumption in East and South-East Asia is stabilizing, but it remains a problematic drug group in many parts of the region

While most countries/territories in East and South-East-Asia have reported some decrease, between 2.8 and 5 million people aged 15 to 64 are estimated to have used opiates in the past year in the subregion. Opiates, and especially heroin, is still reported as the most prevalent drug in China, Indonesia, Malaysia and Myanmar. The highest prevalence of opiate use of 1.3% and 1.2% respectively in this subregion are estimated to be found in Malaysia (among the population aged 15-64, 2002) and Macao, China (among the population aged 15-64, 2003) respectively. In Malaysia, a similar prevalence of injecting drug use among the population aged 15-64 is reported with an HIV prevalence of 10.3% among this

Fig. 126: Global trend in the perception of opiate use: cumulative unweighted average* as reported by national experts

* The graph measures the trend from countries reporting an increase or decrease in drug use. It does not measure the trend in terms of number of drug users.

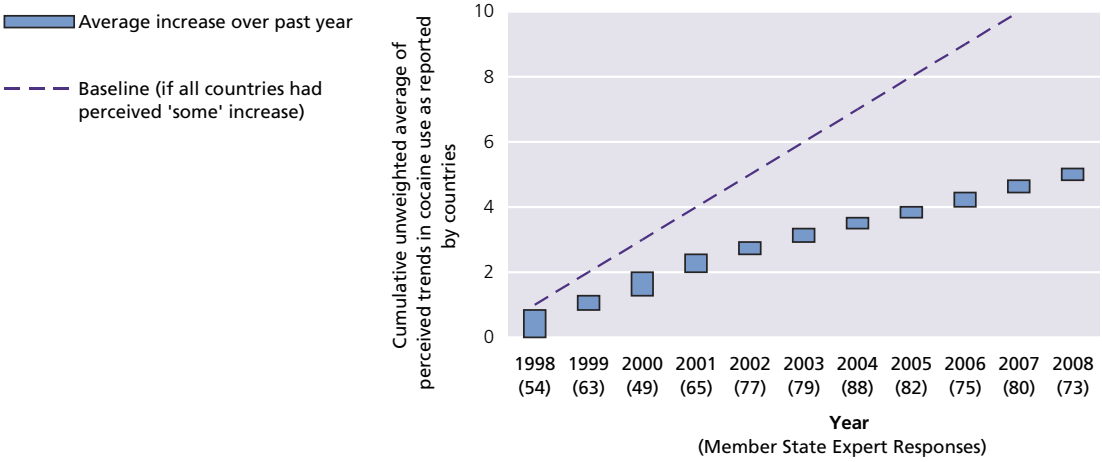
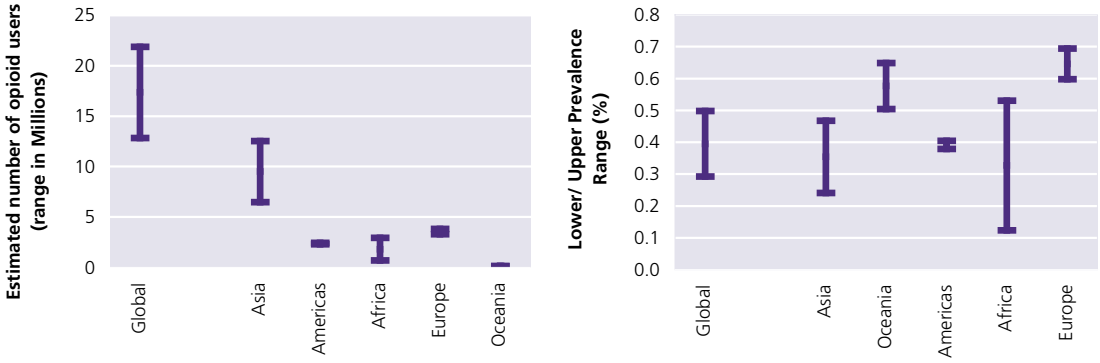


Table 16: Estimated number of people who used opiates at least once in the past year and prevalence of opiate use in the population aged 15-64, by region, 2008

Region/Subregion	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population age 15-64 (lower)	-	Percent of population age 15-64 (upper)
Africa	680,000	-	2,930,000	0.1	-	0.5
Eastern Africa	150,000	-	1,730,000	0.1	-	1.3
North Africa	130,000	-	540,000	0.1	-	0.4
Southern Africa	240,000	-	320,000	0.2	-	0.3
West and Central Africa	160,000	-	340,000	0.1	-	0.2
Americas	2,290,000	-	2,440,000	0.4	-	0.4
Caribbean	60,000	-	90,000	0.2	-	0.3
Central America	100,000	-	110,000	0.4	-	0.4
North America	1,290,000	-	1,380,000	0.4	-	0.5
South America	840,000	-	870,000	0.3	-	0.3
Asia	6,460,000	-	12,540,000	0.2	-	0.5
Central Asia	340,000	-	340,000	0.7	-	0.7
East/South-East Asia	2,830,000	-	5,060,000	0.2	-	0.3
Near and Middle East	1,890,000	-	3,820,000	0.8	-	1.5
South Asia	1,390,000	-	3,310,000	0.2	-	0.4
Europe	3,290,000	-	3,820,000	0.6	-	0.7
Eastern/South-East Europe	2,210,000	-	2,460,000	0.8	-	0.9
Western/Central Europe	1,090,000	-	1,370,000	0.4	-	0.5
Oceania	120,000	-	150,000	0.5	-	0.6
Global	**12,840,000**	**-**	**21,880,000**	**0.3**	**-**	**0.5**

Fig. 127: Range of estimated numbers and annual prevalence of opiate use globally and by region



group.[21] Except for Myanmar, there is no new information on opiate consumption available for 2008 in the subregion. Higher than global average prevalence of opiate use is reported in Myanmar, where opium-producing villages have a higher consumption rate than non-producing villages.[22] In Myanmar, heroin use is still less widespread than opium use, but data suggest that heroin use may have increased in recent years.[23] Opium use among the population aged 15 and older has decreased from 2% among men to 1.4%, and from 0.2% among women in 2008 to 0.1% in 2009. On the other hand, heroin use has increased from 0.1% in 2008 to 0.3% in 2009.[24]

21 Mathers B., Degenhardt L., Phillips B., Wiessing L., Hickman M., Strathdee A., Wodak A., Panda S., Tyndall M., Toufik A.and Mattick R., on behalf of the Reference Group to the United Nations on HIV and Injecting Drug Use, "Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review," *The Lancet,* 2008; 372:1733-1745.

22 UNODC, *Opium poppy cultivation in South-East Asia,* December 2009.

23 Ibid.

24 UNODC, *Opium poppy cultivation in South-East Asia,* December 2008.

Opiate use in Central and South-West Asia remains the highest

Most countries in these subregions have opiate use prevalence rates that are higher than the world average. New information was available for Afghanistan, where a sharp increase was observed in opiate use, and in Azerbaijan, showing a slight decrease (from a 0.3% annual prevalence rate among the population aged 15-64 in 2006 to 0.2% in 2008). Last year's drug use survey conducted in Afghanistan suggests that the country has one of the highest opiate use prevalence rates in the world, ranging between 2.3% and 2.9% of the population aged 15-64 (between 285,000 and 360,000 users). Opium is the most commonly used opiate, with estimates ranging between 200,000 and 250,000 regular users. The number of heroin users in Afghanistan is estimated between 100,000 and 135,000. The opiate use prevalence in the Islamic Republic of Iran in 1999 was reported as 2.8% of the population, and more than 2 million people were estimated to be regular opiate users. However, experts in the Islamic Republic of Iran perceive that there has been a slight decrease in opiate use over the last years.[25] Both in Afghanistan and the Islamic Republic of Iran, opium remains the preferred opiate, while heroin remains the main opiate in the rest of the subregion. In Pakistan, the opiate use prevalence rate was reported as 0.7% or an estimated 630,000 people who had used opiates in the past year in 2006.[26]

In Central Asia, Kazakhstan in particular has a high opiate use prevalence rate (1% in 2006), followed by Uzbekistan and Kyrgyzstan (0.8% each). Estimates for Tajikistan (0.5%) and Turkmenistan (0.3%) are lower.[27] Injecting drug use is reportedly one of the preferred methods in Central Asia, with increasing numbers also reported in Pakistan and the Islamic Republic of Iran. Injecting drug use is fuelling the HIV epidemic among injecting drug users in the region. The highest HIV prevalence among injecting drug users in the region is reported from Uzbekistan, Tajikistan, the Islamic Republic of Iran and Pakistan.[28]

South Asia

No new information was available for South Asia in 2008, and the lack of accurate, up to date information on the prevalence of opiate use among the general population in India makes uncertain the estimate of the number of users for this subregion. In a national survey in 2001, a high prevalence rate was observed among Indian males (monthly prevalence rate of 0.7% among the male population 12-60 years old), but the lack of information on female opiate use prevents the calculation of a generally accepted, internationally comparable prevalence rate.[29] In the region, Bangladesh and Bhutan have opiate prevalence rates close to the world average (around 0.4%). In Bangladesh, India and Nepal, illicit use of opioids such as buprenorphine, especially through

Table 17: Number of injecting drug users and HIV prevalence among those who inject drugs

Source: UNODC and the Paris Pact Initiative, *Illicit Drug Trends in Pakistan*, April 2008; UNODC Global Assessment Programme on Drug Use; Mathers B., et al, on behalf of the Reference Group to the United Nations on HIV and Injecting Drug Use

	Estimated number of people who inject drugs			Prevalence of HIV among people who inject drugs (%)		
	Low	Mid	High	Low	Mid	High
Afghanistan	6,870	6,900	6,930	1.7	3.4	5.1
I.R. of Iran	-	-	180,000	5	15	25
Pakistan	125,000	130,460	150,000	9.6	10.8	13.6
Kazakhstan	-	-	100,000	8	9.2	10.4
Kyrgyzstan	-	-	25,000	2.4	8.0	13.6
Tajikistan	-	-	17,000	11.5	14.7	17.9
Uzbekistan	-	-	80,000	11.7	15.6	19.5

25 Islamic Republic of Iran, *Annual Reports Questionnaire: Extent, patterns and trends of drug abuse,* 2008.

26 UNODC and the Paris Pact Initiative, *Illicit Drug Trends in Pakistan,* April 2008; UNODC Global Assessment Programme on Drug Use/ Ministry of Narcotics Control of the Government of Pakistan, Anti-Narcotics Force of the Government of Pakistan, *Problem Drug Use in Pakistan, Results from the year 2006 National Assessment*, Tashkent, 2007.

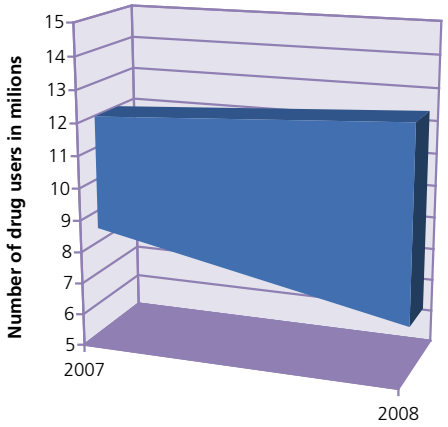
27 UNODC, *HIV and AIDS and Injecting Drug Use in Central Asia: From Evidence to Action,* country reports for Kyrgyzstan, Tajikistan and Uzbekistan.

28 Mathers B., Degenhardt L., Phillips B., Wiessing L., Hickman M., Strathdee A., Wodak A., Panda S., Tyndall M., Toufik A. and Mattick R., on behalf of the Reference Group to the United Nations on HIV and Injecting Drug Use, " Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review," *The Lancet,* 2008; 372:1733-1745.

29 Previous UNODC estimates put the rate at around 0.4% for the year 2001.

Fig. 128: Annual opiate users in Asia, 2007-2008

Source: UNODC ARQ



injecting, is reportedly common.[30] In Sri Lanka, smoking heroin remains the preferred method of use.

Other than Israel, most of the countries in Middle East have reportedly negligible opiate use. However, this is also due to the fact that there is limited data on drug use and treatment demand from the region.

East and South-East Europe as a subregion has the second highest number of opiate users, ranging between 2.2 and 2.5 million people

The subregion on the whole seems to have one of the highest prevalence rates in the world (0.8% to 0.9% of the population aged 15-64), though individual country estimates must be treated with caution. The Russian Federation and Ukraine are the two countries in the subregion with the highest estimated number of opiate users. In the Russian Federation, the number of opiate users are estimated between 1.6 and 1.8 million (1.6% prevalence) and in Ukraine, between 325,000 and 425,000 (1.16% prevalence). The only country reporting new information in 2008 was the Republic of Moldova, showing an increase from a 0.1% annual prevalence rate in 2007 to 0.15% in 2008. Both the Russian Federation and Ukraine have some of the highest HIV prevalence rates among injecting drug users (37.2% and 41.8%, respectively).[31] The other countries in the region have opiate use prevalence rates either equivalent to or lower than the world average.

European data suggest that while heroin use is decreasing its associated harm is growing

In West and Central Europe, the opiate use prevalence is estimated between 0.4% and 0.5% of the general population, with the corresponding number of opiate users between 1 and 1.4 million. The 2008 range shifted slightly down from the one estimated in 2007, when the number of opiate users was estimated between 1.2 and 1.5 million, reflecting a decrease in most of the countries which reported new estimates in 2008. Scotland and Estonia are the two countries with high prevalence of opiate use in West and Central Europe (1.5% among the population aged 15-64).

While overall heroin use may be stable or declining in West and Central Europe, problems associated with heroin abuse seem to increase. Based on a sample of 19 countries, the overall number of primary heroin users entering treatment increased between 2002 and 2007. More than half of the reporting countries recorded

Table 18: Expert perception of the opiates us trend between 2007 and 2008

Source: UNODC ARQ

Region	Member States providing perception data	Member States perception response rate	Use problem increased*	Percent use problem increased	Use problem stable	Percent use problem stable	Use problem decreased*	Percent use problem decreased
Africa	12	23%	6	50%	2	17%	4	33%
Americas	12	34%	6	50%	5	42%	1	8%
Asia	28	62%	11	39%	11	39%	6	21%
Europe	31	69%	9	29%	19	61%	3	10%
Oceania	1	7%	0		1		0	
Global	**84**	**44%**	**32**	**38%**	**38**	**45%**	**14**	**17%**

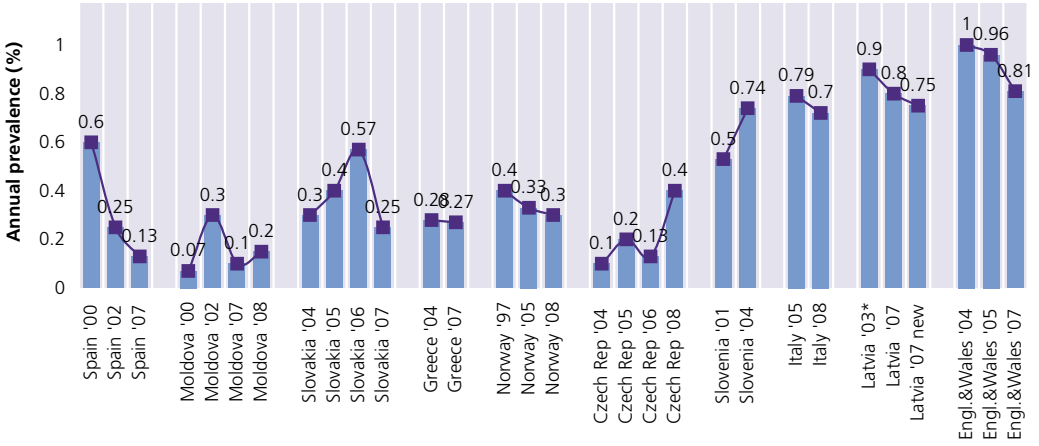
* Identifies increases/ decreases ranging from either some to strong, unweighted by population.

30 UNODC, *Rapid Situation and Response Assessment of drugs and HIV in Bangladesh, India, Nepal and Sri Lanka – a regional report*, 2007.

31 Mathers B., Degenhardt L., Phillips B., Wiessing L., Hickman M., Strathdee A., Wodak A., Panda S., Tyndall M., Toufik A. and Mattick R, on behalf of the Reference Group to the United Nations on HIV and Injecting Drug Use, "Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review," *The Lancet*, 2008; 372:1733-1745.

Fig. 129: Trends in prevalence rate of opiate use among the population aged 15-64 in European countries reporting new or revised data in 2008

Source: UNODC *Estimate for Riga only.



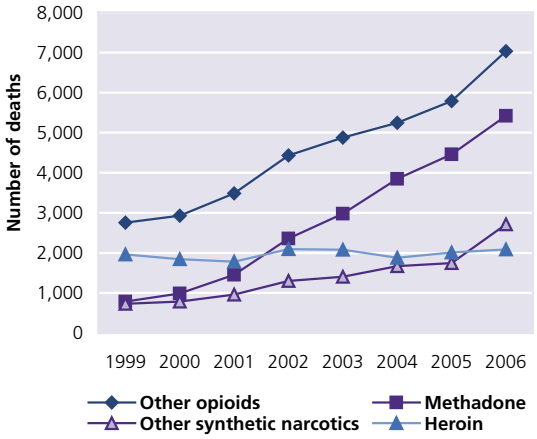
increasing numbers of drug-induced deaths, mostly associated with opioid use, between 2006 and 2007.[32] Spain, Portugal, Italy and France are the countries with the highest prevalence of HIV among injecting drug users (39.7%, 15.6%, 12.1% and 12.2% respectively).[33]

Opiates use remains problematic in North America with increasing problems in the abuse of prescription opioids

In North America, the highest prevalence of heroin use was reported from the United States in 2000 (0.58% of the population aged 15-64).[34] Household survey data suggest that the level of heroin use remained rather stable until 2008. Other heroin abuse indicators, including heroin treatment admissions and drug overdose deaths involving heroin, had, however, increased in some parts of the United States in 2008.[35] Non-medical use of prescription opioids, although stable over the past years, remains a major problem across the United States. In 2008, 6.2 million people (aged 12 and older) had used prescription medication in the month prior to the survey.[36] Significantly increasing trends in the use of prescription and over-the-counter drugs, including oxycodone and hydrocodone among teens,[37] is reported. From 1999 to 2006 the number of fatal poisonings involving opioid analgesics more than tripled from 4,000 to 13,800 deaths.[38]

Fig. 130: Opioid-related deaths in the USA, 1999-2006

Source: Warner M., Chen L. and Makuc D. M., *Increase in Fatal Poisonings involving opioid analgesics in the United States 1999-2006*, National Centre for Health Statistics (NCHS) Data Brief Number 22, September 2009, Centers for Disease Control and Prevention (USA)



In Canada, while the overall prevalence of opiate[39] use is 0.3% of the population, heroin use has also been overshadowed by abuse of prescription opioids.[40]

32 EMCDDA, *Annual Report 2009: the state of the drugs problem in Europe*, Lisbon 2009.

33 Reference group to United Nations on HIV and Injecting Drug Use.

34 US ONDCP, 2000.

35 NIDA, *Epidemiological Trends in Drug Abuse*, Proceedings of the Community Epidemiology Work Group, Highlights and Executive Summary, January 2009.

36 US DHHS, SAMHSA, *National Survey on Drug Use and Health (NSDUH)*, 2008 highlights.

37 NIDA, Monitoring the Future Survey, Overview of 2009 Findings.

38 CDC/NCHS, Warner, M., Chen , L-H, et al. *Increase in Fatal Poisonings Involving Opioid Analgesics in the United States, 1999 – 2006*, NCHS Data Brief No. 2, September 2009.

39 Opiates refer to one of a group of alkaloids derived from the opium poppy. The term excludes synthetic opioids (WHO Lexicon of alcohol and drug terms).

40 RCMP, *Reports on the Illicit Drug Situation in Canada*, 2008.

What is known about opiate use in the Pacific Islands?

While there is limited information on drug use from the smaller Pacific Islands, the United States Centers for Disease Control and Prevention has conducted surveys among high school students in the Pacific Island US territories. Within the territories, the results from the Marshall Islands are quite astonishing. The lifetime prevalence of injecting drugs is reported as 15.8%, while the lifetime prevalence of heroin use is reported as 11.6% among the 9th-12th grade students. These are one of the highest rates of injecting and heroin use among secondary school students in the world and would call for serious prevention and other interventions for the Marshall Island students.

Source: Lippe J., Brener N., et al *Youth Risk Behaviour Surveillance – Pacific Island United States Territories, 2007* Surveillance Summaries November 21, 2008/55 (SS212):28-56 (Centers for Disease Control and Prevention, Atlanta, Georgia, USA)

In South America, the highest prevalence of opioids[41] use was reported by Brazil and Chile (0.5% of the population between 15 and 64 years, with corresponding numbers of 640,000 and 57,000, respectively). In both cases, prescription opioids constitute the key problem while abuse of heroin is still extremely low. In Chile, the 2008 estimate (0.5%) represents an increase from the 0.3% reported in 2006. For the first time, Costa Rica reported data on prevalence of opioid users showing that in 2006, 2.7% of the population aged 12-70 used opioids at least once during the preceding year. However, this estimate needs to be reviewed with caution as it includes use of preparations that include all methylphenidate-type and anorexigenous stimulants prepared with codeine.[42] Other countries in the region have low opiate use prevalence rates ranging from 0.1% in Ecuador to 0.3% in the Plurinational State of Bolivia. In South America, most countries report use of synthetic opioids rather than heroin.

Opioid use in Oceania increased

The number of opiate and opioid users in Oceania in 2008 ranged between 120,000 and 150,000 people, an increase from 2007 when 90,000 people were estimated to have used the substances at least once in the previous year. The higher estimate reflects a sharp increase observed in New Zealand, where the annual prevalence among 16-64 year olds reached 1.1% in 2008 from 0.4% observed in 2006. With the new estimate, New Zealand has a much higher prevalence than Australia. In New Zealand, street morphine and street methadone are the most widely available and used opioids.[43] In Australia, currently there is no indication of heroin use returning to the levels of use seen prior to the 2001 heroin shortage. Nevertheless, heroin-related overdose cases are commonly observed. Non-medical use of opioids including methadone, buprenorphine, morphine and oxycodone remain common, however.[44]

Opiate use is perceived to be increasing in Africa

There are an estimated 680,000 to 2.9 million opiate users in Africa. This wide range reflects missing data and information on opiate use from most parts of the continent. Experts from half of the responding African states perceived increasing opiate use, which likely reflected, in part, the increasing role of African countries as transit areas for heroin from Afghanistan to Europe. Opiates are the second most common drug group in terms of numbers of individuals seeking treatment.[45] Mauritius, Kenya and Egypt are the countries in the region with the highest prevalence of opiate use (1.9%, 0.7% and 0.4% respectively.[46]) Mauritius also has high prevalence of injecting drug use and a concentrated HIV epidemic among these users.[47] South Africa is the only country with a drug use surveillance system based on treatment demand (the South African Community Epidemiology Network on Drug Use – SACENDU). During the first half of 2009, in South Africa, treatment admissions for heroin problems have remained stable or declined in some parts of the reporting regions; but data also show far higher levels than a decade ago.[48]

41 Opioid is the generic term applied to alkaloids from the opium poppy, and their synthetic analogues. The opium alkaloids and their semi-synthetic derivatives include morphine, diacetylmorphine, codeine and oxycodone as well as fentany, methadone, pethidine, and pentazocine, (WHO Lexicon of alcohol and drug terms).

42 Organization of American States, Inter American Drug Abuse Control Commission (CICAD), *Multilateral Evaluation Mechanism (MEM) Governmental Expert Group (GEG): Evaluation of Progress in Drug Control 2003-2004.*

43 Wilkins C., Griffiths R. and Sweetsur P., *Recent Trends in illegal drug use in New Zealand, 2006 – 2008*, Findings from the Illicit drug monitoring system (IDMS).

44 Stafford J, Sindiicich N. et al, *Australian drug trends 2008*. Findings from the Illicit drug reporting system (IDRS).

45 *World situation with regard to drug abuse* – Report of the Secretariat (E/CN/2010/2) para. 21.

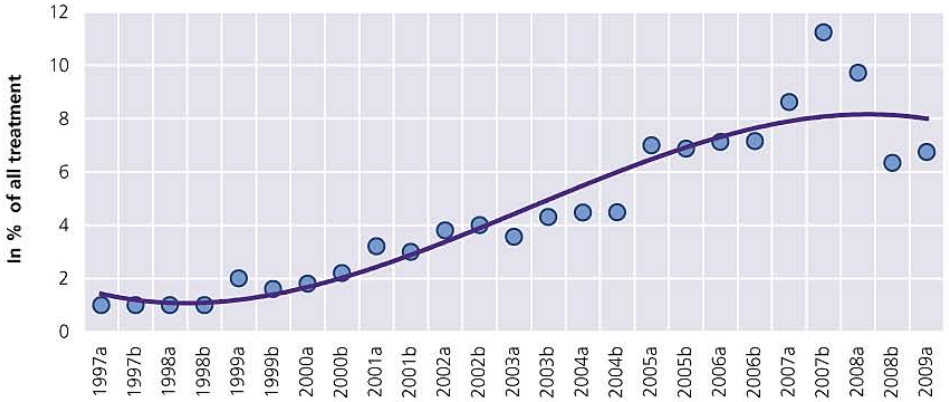
46 The estimates in Mauritius are derived from a Rapid Assessment Study and adjusted for age by UNODC, in Kenya extrapolated from the information form the data from Reference group to the UN on HIV and Injecting Drug Users, 2009 and in Egypt derived from a national household survey.

47 Abdool R., Sulliman R. and Dhannoo M., "The injecting drug use and HIV/AIDS nexus in the Republic of Mauritius," *African Journal of Drug & Alcohol Studies*, 5(2), 2006.

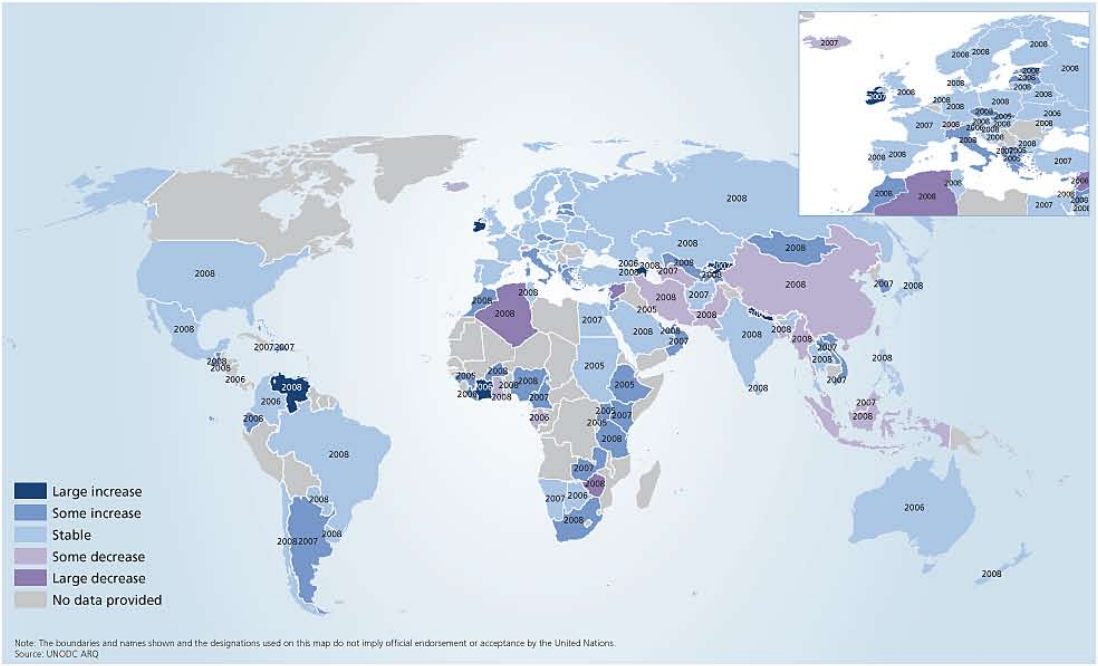
48 Pluddemann A., Parry C., Bhana A., et al, *Alcohol and Drug Abuse Trends, January – June 2009, Phase 26,* South African Community Epidemiology Network on Drug Use (SACENDU) 26 November 2009.

Fig. 131: South Africa: Percentage of all treatment admissions for heroin, 1997-2009

a - represents the first part of the year, b - presents the second half of the year.
Source: Pluddemann A, Parry C., Bhana A, et al, *Alcohol and Drug Abuse Trends, January – June 2009*, Phase 26 (SACENDU reports the data biannually)

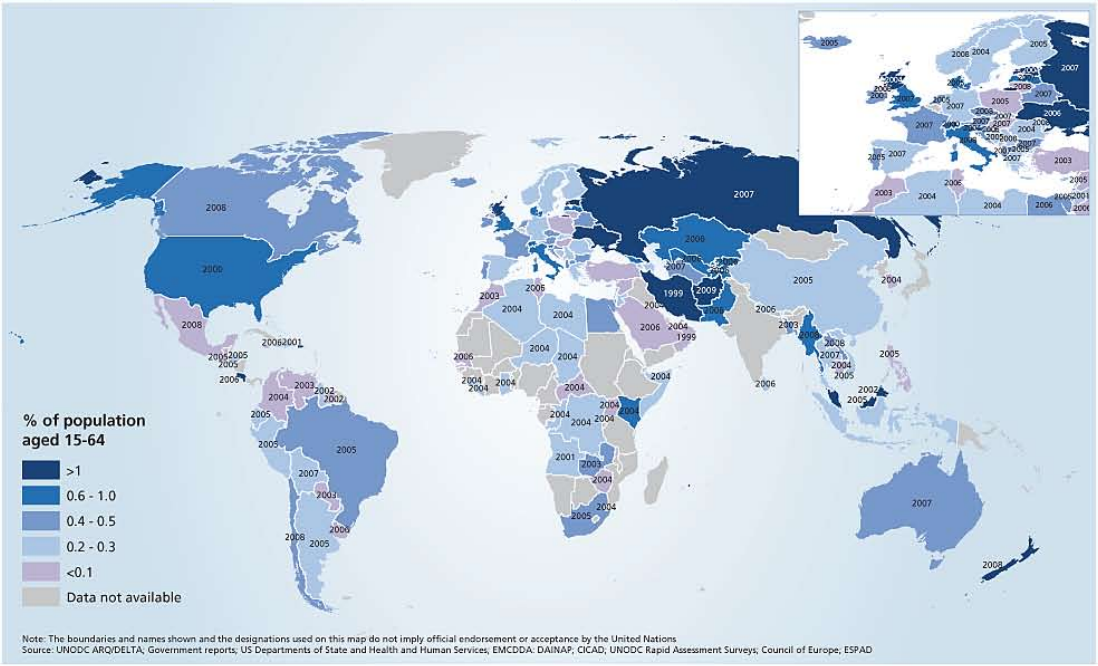


Map 16: Expert perception of trend changes in the use of opiates, 2008 (or latest year available back to 2005)



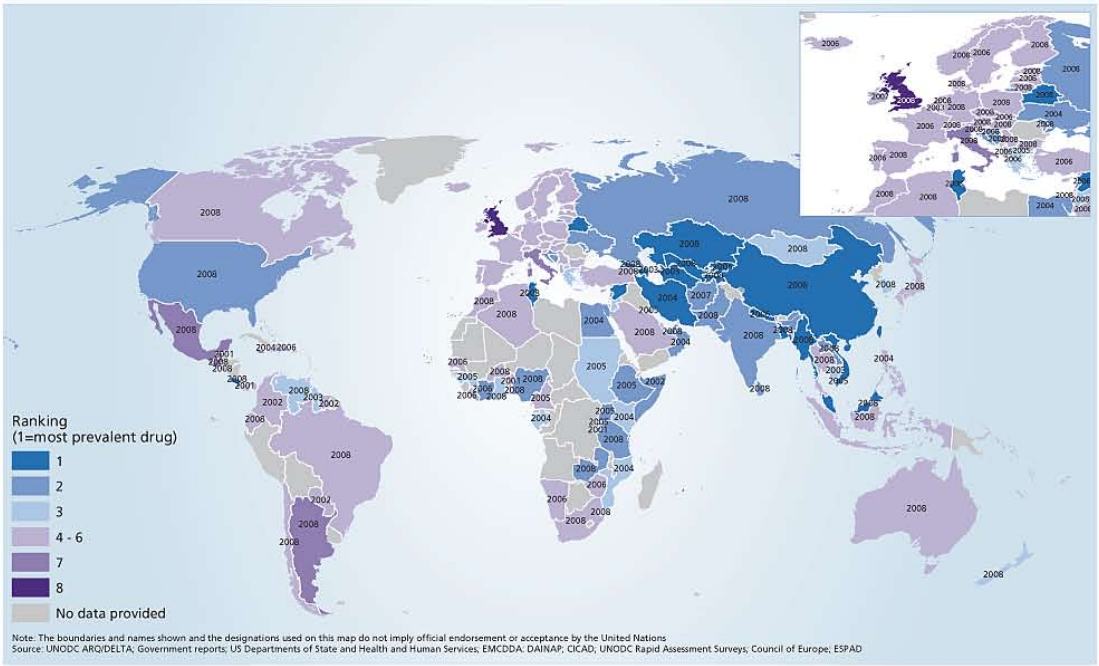
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Source: UNODC ARQ

Map 17: Use of opiates including heroin, 2008-2009 (or latest year available)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations
Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA: DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD

Map 18: Ranking of opiates in order of prevalence, 2008 (or latest year available)



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations
Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA: DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD

2.3 Coca/cocaine

2.3.1 Production

Cultivation

The global area under coca cultivation decreased by 5% from 167,600 ha in 2008 to 158,800 ha in 2009, mainly due to a significant decrease in Colombia, which was not offset by increases in Peru and the Plurinational State of Bolivia. This is about the same level of cultivation as during the period 2003 to 2006. Colombia remained the country with the largest area under coca cultivation but the distance to the second largest, Peru, has shrunk due to two consecutive years of decreases in Colombia and increases in Peru over the same period.

In Colombia, the area under coca cultivation decreased for a third year to 68,000 ha, a 16% decrease over 2008. Most of the reduction took place in the departments of Putumayo, Nariño and Antioquía.

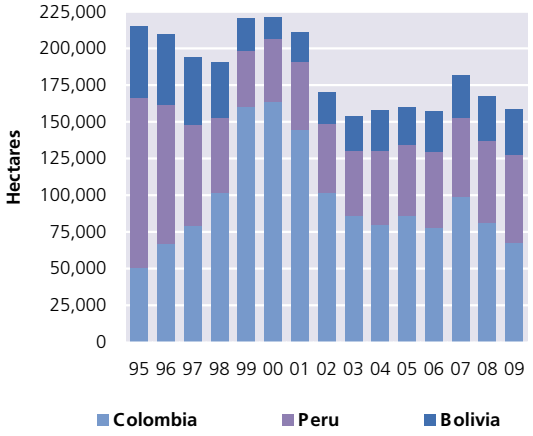
In 2009, coca cultivation in Peru increased by 7% from 2008 and reached 59,900 ha. Peru remained the second largest coca cultivating country, after Colombia. This is the country's third consecutive increase in three years. The cultivation level is 55% or 21,200 ha more than in 1999, when coca cultivation was at its lowest level in the last two decades at 38,700 ha. The area under cultivation in the three main growing regions Alto Huallaga, Apurímac-Ene and La Convención-Lares, where large parts are already covered with coca plantations, increased only slightly. Most of the increase in absolute and percentage terms took place in smaller growing regions such as Aguaytía, Inambari-Tambopata and Palcazú-Pichis-Pachitea, which have seen a considerable expansion of the area under coca cultivation since 2004.

Coca cultivation in the Plurinational State of Bolivia in 2009 remained by and large at the 2008 level with only a slight increase of 1% to 30,900 ha. The increase took place in both large growing regions, the Yungas of La Paz and Chapare.

Eradication reports from Ecuador indicated the existence of small-scale coca cultivation. However, surveys implemented by UNODC in cooperation with the Government of Ecuador in 2006 and 2008 confirmed that the level of coca cultivation was insignificant.[1]

Fig. 132: Global coca bush cultivation (ha), 1995-2009

Source: see Table 'Global illicit cultivation of coca bush and production of coca leaf and cocaine, 1995-2009'



1 The surveys covered provinces in the north of Ecuador bordering Colombia.

Table 19: Global illicit cultivation of coca bush and production of coca leaf and cocaine, 1995-2009

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
CULTIVATION OF COCA BUSH IN HECTARES [a]															
Bolivia [b]	48,600	48,100	45,800	38,000	21,800	14,600	19,900	21,600	23,600	27,700	25,400	27,500	28,900	30,500	30,900
Colombia [c]	50,900	67,200	79,400	101,800	160,100	163,300	144,800	102,000	86,000	80,000	86,000	78,000	99,000	81,000	68,000
Peru [d]	115,300	94,400	68,800	51,000	38,700	43,400	46,200	46,700	44,200	50,300	48,200	51,400	53,700	56,100	59,900
Total	**214,800**	**209,700**	**194,000**	**190,800**	**220,600**	**221,300**	**210,900**	**170,300**	**153,800**	**158,000**	**159,600**	**156,900**	**181,600**	**167,600**	**158,800**
POTENTIAL PRODUCTION OF DRY COCA LEAF IN METRIC TONS [e]															
Bolivia [f]	85,000	75,100	70,100	52,900	22,800	13,400	20,200	19,800	27,800	38,000	28,200	33,200	36,400	39,400	40,200
Colombia [g]	80,900	108,900	129,500	165,900	261,000	266,200	236,000	222,100	186,050	164,280	164,280	154,130	154,000	116,900	103,100
Colombia (fresh coca leaf) [h]										552,800	555,400	528,300	525,300	389,600	343,600
Peru [i]	183,600	174,700	130,600	95,600	69,200	46,200	49,300	52,500	72,800	101,000	97,000	105,100	107,800	113,300	119,000
POTENTIAL MANUFACTURE OF COCAINE IN METRIC TONS [j]															
Bolivia [b]	240	215	200	150	70	43	60	60	79	98	80	94	*104*	*113*	n.a.
Colombia [k]	230	300	350	435	680	695	617	580	550	680	680	660	630	450	410
Peru [l]	460	435	325	240	175	141	150	160	230	270	*260*	*280*	*290*	*302*	n.a.
Total	**930**	**950**	**875**	**825**	**925**	**879**	**827**	**800**	**859**	**1,048**	***1,020***	***1,034***	***1,024***	***865***	*

* Due to the ongoing review of conversion factors, no point estimate of the level of cocaine production could be provided for 2009. Because of the uncertainty on the level of total potential cocaine production, the 2009 figure was estimated as a range (842-1,111 mt). For more detailed information, see Statistical Annex (4.1.1). It should be noted that the trend estimate of cocaine production between 2008 and 2009 indicate a stable situation.

a) Potentially harvestable, after eradication.

(b) Sources: 1995-2002: CICAD and US Department of State, International Narcotics Control Strategy Report. For the region Yungas of La Paz since 2002, for all regions since 2003: National Illicit Crop Monitoring System supported by UNODC. Cocaine production: Before 2003, CICAD and US Department of State. Since 2003, own calculations based on UNODC (Yungas of La Paz) and DEA (Chapare) coca leaf yield surveys and DEA conversion factors from leaf to cocaine HCl (currently under review).

(c) Sources: 1995-1998: CICAD and US Department of State, International Narcotics Control Strategy Report; since 1999: National Illicit Crop Monitoring System supported by UNODC.

(d) Sources: 1995-1999: CICAD and US Department of State, International Narcotics Control Strategy Report; since 2000: National Illicit Crop Monitoring System supported by UNODC.

(e) Refers to the potential coca leaf production available for cocaine production, i. e. after deducting the amount, which Governments report as being used for traditional or other purposes allowed under national law. In the absence of a standard definition of "dry coca leaf" and given considerable differences in the processing of the fresh coca leaf harvested, the figures may not always be comparable across countries.

(f) Since 2005, potential sun-dried coca leaf production available for cocaine production, estimated by the National Illicit Crop Monitoring System supported by UNODC. This figure does not include the estimated amount of coca leaf produced on 12,000 ha in the Yungas of La Paz where coca cultivation is authorized under national law.

(g) Sources: 1995-2002: CICAD and US Department of State, International Narcotics Control Strategy Report. Since 2003, potential coca leaf production available for cocaine production estimated by the National Illicit Crop Monitoring System supported by UNODC. Figures refer to oven-dried coca leaf equivalents.

(h) Since 2004, fresh coca leaf production figures are available based on coca leaf yield studies done by UNODC and the Government of Colombia. Similar to potential cocaine production, fresh coca leaf production in Colombia is calculated based on two-year area averages.

(i) Since 2003, potential sun-dried coca leaf production available for cocaine production, estimated by the National Illicit Crop Monitoring System supported by UNODC. For the calculation of coca leaf available for cocaine production, 9,000 mt of sun-dried coca leaf were deducted, which, according to Government sources, is the amount used for traditional purposes.

(j) Potential manufacture refers to the amount of 100% pure cocaine that could be produced if all coca leaves harvested from an area under coca cultivation in one year were processed into cocaine, based on the information on cocaine alkaloid content of coca leaves and efficiency of clandestine laboratories. Estimates for Bolivia and Peru take into account that not all coca leaf production is destined for cocaine production.

(k) Since 2004, cocaine manufacture is calculated based on the average area under coca cultivation of the reporting year and the previous year. This is thought to be closer to the actual amount produced than a figure solely based on the year-end cultivation. Colombian cocaine manufacture estimates for 2004 and later are based on new research and cannot be directly compared with previous years. For the calculation of the 2009 cocaine manufacture new information on coca leaf yield available for some regions was used. Estimates from 2004 to 2008 were revised in 2010 based on more detailed information on the average cocaine base purity (81%) and the cocaine base to HCl conversion ratio (1:1) available from DEA scientific studies.

(l) Figures from 2003 to 2005 were revised in 2007 based on updated information available on the amount of coca leaf necessary to produce one kilogram of cocaine HCl. Estimates based on conversion factors from leaf to cocaine HCl from DEA scientific studies (currently under review).

Table 20: Reported spraying and manual eradication of coca bush (ha), 1995-2009

Note: The Plurinational State of Bolivia: Since 2006, voluntary and forced eradication. Peru: includes voluntary and forced eradication.
Source: UNODC ARQ, Government reports, US Department of State (INCSR)

		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Bolivia	manual	5,493	7,512	7,000	11,620	15,353	7,653	9,395	11,839	10,089	8,437	6,073	5,070	6,269	5,484	6,341
Colombia	manual	1,487	4,057	2,262	3,126	1,046	3,495	1,745	2,762	4,219	6,234	31,980	43,051	66,805	95,634	60,557
	spraying	23,915	18,519	41,861	66,029	43,112	58,073	94,153	130,364	132,817	136,552	138,775	172,026	153,134	133,496	104,772
Peru	manual		1,259	3,462	7,834	14,733	6,208	6,436	7,134	11,312	10,399	12,237	12,688	12,072	10,143	10,025
Ecuador	manual										4	18	9	12	12	6
Venezuela	manual	181	18	0	0	0	38	47	0	0	118	40	0	0	0	

Production

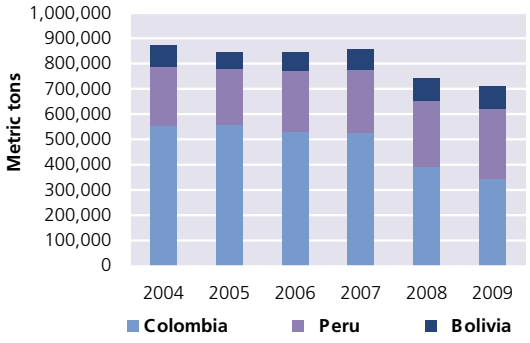
Due to the ongoing review of conversion factors from coca leaves to 100% pure cocaine HCl used to estimate the potential cocaine production in the Plurinational State of Bolivia and Peru, no point estimate of the level of cocaine production could be provided for these countries in 2009. Because of this uncertainty, global cocaine production in 2009 was estimated as a range (842-1,111 mt).[2] The uncertainty concerning conversion factors from leaves to cocaine affects the level of cocaine production in 2009, but other years prior to 2009 may be affected as well. Indeed, production figures provided by UNODC between 2005 and 2009 may be revised once more precise estimates can be elaborated for the conversion factors, which depend on the alkaloid content of the leaves and laboratory efficiency. They do not show major changes from one year to another. Thus, in spite of the uncertainty around the level of the 2009 estimates it can be noted that the total production trend between 2008 to 2009 remained stable.

Cocaine HCl production estimates for Colombia were revised, reflecting the availability of more detailed information on specific elements of the conversion process from the DEA scientific studies. This led to a slight increase in the estimated level of potential cocaine production since 2004. However, potential cocaine production in Colombia declined by 9% from 450 mt in 2008 to 410 mt in 2009.[3]

In the absence of a point estimate for the level of potential cocaine production in 2009, estimates of coca leaf production can provide additional information on recent illicit production trends. To be able to compare coca leaf production across countries, fresh coca leaf production estimates were used where available (Colombia) or calculated from sun-dried leaf production (Plurinational State of Bolivia and Peru) using a conversion factor.[4]

Fig. 133: Global potential production of fresh coca leaf available for cocaine production (mt), 2004-2009

Source: National monitoring systems supported by UNODC. For more details see Table 'Global illicit cultivation of coca bush and production of coca leaf and cocaine, 1995-2009'



Global potential production of fresh coca leaf was relatively stable between 2004 and 2007 at about 850,000 mt, but declined significantly between 2007 and 2008 (by 14%) and again between 2008 and 2009 (by 4%) to just over 700,000 mt. Between 2004 and 2009, Colombia always accounted for the largest share of coca leaf production. However, while Colombia contributed almost two thirds (63%) of total production in 2004, in 2009, it accounted for less than half (48%). Peru's share grew from 27% in 2004 to 39% in 2009, due to a decline in coca leaf production in Colombia in absolute terms and an increase in production in Peru over the same period.

2 For more detailed information, see Annex 'The process of estimating the production of pure cocaine HCL.'

3 For more details, see Ibid.

4 The average weight loss from fresh to sun-dried leaf measured in UNODC's yield studies ranged from 52% (Bolivia, Yungas of La Paz) to 57% (average Peru). Only the amount of coca leaves estimated to be available for cocaine production was included in the estimate. More details see Table 'Global illicit cultivation of coca bush and production of coca leaf and cocaine, 1995-2009.'

Measuring coca leaf yield

Three elements are needed to estimate cocaine production each year: i) number of hectares under coca leaf cultivation; ii) annual coca leaf yield (quantity of leaves harvested per hectare in a year); and iii) alkaloid content of the leaves and efficiency of clandestine laboratories to extract these alkaloids, which determine the quantity of coca leaves needed to produce pure cocaine hydrochloride (HCl). Coca leaf yield is the element that probably shows the highest variation since it is affected by unpredictable factors such as weather, plant diseases, as well as eradication activities. The effect of these factors varies not only from year to year and during the course of a year but also from one cultivating region to the other. Thus, the annual coca leaf yield can be estimated with less certainty than the other elements.

Since 2004, UNODC, in cooperation with the respective Governments, undertook coca leaf yield studies in many coca growing regions in the Plurinational State of Bolivia, Colombia and Peru. The core element of these studies is the controlled harvest of mature coca fields. For this purpose, sample plots are selected randomly among a set of fields which are also randomly selected among all fields under coca leaf cultivation. All coca leaves in the sampled plots are harvested and weighed on the spot. In the Plurinational State of Bolivia and Peru, where farmers sun-dry coca leaves after the harvest, an additional weight measurement is taken after the sun-drying. The weight of the harvested coca leaves divided by the area of the sample plots is the yield per hectare of that plot (for one harvest). Yield measurements from all plots and fields are used to determine the per hectare yield in the studied area.

The coca bush allows several harvests per year, with four being a typical number. Depending on seasonal variations, such as periods with higher precipitation or variations in farming practices (application of fertilizer and/or irrigation) or counter-narcotics activities such as spraying with herbicide, the yield varies from harvest to harvest. These variations have to be taken into account. Ideally, all harvests in the selected plots should be measured. However, often the security situation in coca cultivation regions does not allow for a return to sample fields for further measurements. Then, information from farmers' interviews can be used to estimate the number and yield of past harvests. The annual yield is the sum of all coca leaf yields in the course of one year.

Due to the different post-harvest processing methods in the Andean countries, coca leaf yield and production figures can be expressed in fresh, sun-dry or oven-dry leaf. Fresh coca leaf is typically used in Colombia, where the leaves are processed directly after harvesting to extract the alkaloids, often by the farmers themselves. In the Plurinational State of Bolivia and Peru, farmers dry the harvested coca leaves in a process referred to as sun- or air-drying before the alkaloids are extracted. Sun-drying is also used to produce coca leaves for traditional uses such as tea preparation and mastication (chewing). Sun-drying reduces the weight of the fresh leaves by more than 50%. It makes transportation easier and increases the shelf life of the coca leaves. Oven-dry weight is a standard that allows comparing coca leaf yields across countries with different post-harvest processing methods. Coca leaves are dried in an oven to extract moisture until their weight is stable. This method requires a scientific laboratory. After oven-drying, coca leaves have only about one third of their fresh weight.

Total cocaine production can be estimated by determining the cocaine alkaloid content of coca leaves and multiplying it with the total coca leaf production estimated from yield and cultivation surveys. As clandestine laboratories are not able to extract 100% of the cocaine alkaloids contained in the leaf, a factor representing the efficiency of these laboratories is applied. Depending on the extraction method used, clandestine laboratories can extract between 40% and 80% of the alkaloids present in the coca leaves.

Sources: United Nations International Drug Control Programme, Guidelines for yield assessment of opium gum and coca leaf from brief field visits New York, 2001; US Government, DEA Studies, 1993-2005.

Clandestine laboratories

In 2008, Governments reported the detection of 9,730 clandestine installations ('laboratories') involved in coca processing, compared to 7,245 in 2007. As in past years, about 4% of the total installations detected were producing cocaine HCl. Over 99% of coca processing laboratories were located in the three coca cultivating countries, Plurinational State of Bolivia, Colombia and Peru. Over the last four years, there was a significant increase in coca processing laboratories reported destroyed in these countries and also worldwide.

In 2008, cocaine laboratories were also reported from other countries in South America, such as Argentina (20), the Bolivarian Republic of Venezuela (10), Chile (4) and Ecuador (3). Outside South America, Spain (25), the Netherlands (4), the Republic of Moldova (1)

Table 21: Clandestine coca processing installations, 2005-2008

Note: Previous years' figures were revised based on updated information received from Governments.
Source: UNODC ARQ, Government reports

	2005	2006	2007	2008
Cocaine paste/base producing installations	5,690	6,849	6,930	9,341
Percentage of coca processing installations detected in coca cultivating countries	>99%	>99%	>99%	>99%
Cocaine HCl producing laboratories	212	244	315	389
Cocaine HCl labs as % of total installations	4%	3%	4%	4%
Cocaine HCl labs in coca cultivating countries	166	215	308	322
Total coca processing installations detected	**5,902**	**7,093**	**7,245**	**9,730**

and Greece (1) reported the detection of cocaine laboratories. Preliminary reports from Governments of countries with coca cultivation indicate that in 2009, the number of clandestine coca processing laboratories detected was almost as high as in 2008, and significantly higher than 2005-2007.

2.3.2 Seizures

Following a significant increase over the period 2002-2005, global cocaine seizure totals have followed a stable trend, amounting to 712 mt in 2007 and 711 mt in 2008. Seizures continued to be concentrated in the Americas and Europe. However, the transition from 2007 to 2008 brought about a geographical shift in seizures towards the source countries for cocaine. Seizures in South America accounted for 59% of the global total for 2008, compared with 45% in 2007. This was mainly due to increases in several South American countries, notably Colombia, and simultaneous decreases in North America and Europe.

More cocaine stopped at the source

Cocaine seizures in South America reached record levels in 2008, amounting to 418 mt (cocaine base and salts) – almost one third more than the level in 2007 (322 mt). In absolute terms, the largest increase from 2007 was by far the one registered in Colombia (an increase of 61.9 mt). In relative terms, significant increases were also recorded in Peru (where seizures almost doubled), the Plurinational State of Bolivia (where seizures rose by 62%), Argentina (51%), Brazil (21%) and Ecuador (12%). One exception to the generally increasing trend prevalent in South America was Chile, which registered a decrease of 12%. Seizures in the Bolivarian Republic of Venezuela remained essentially stable.

Fig. 135: Trend in South American cocaine seizures (excluding Colombia), 2007-2008

Source: UNODC ARQ/DELTA

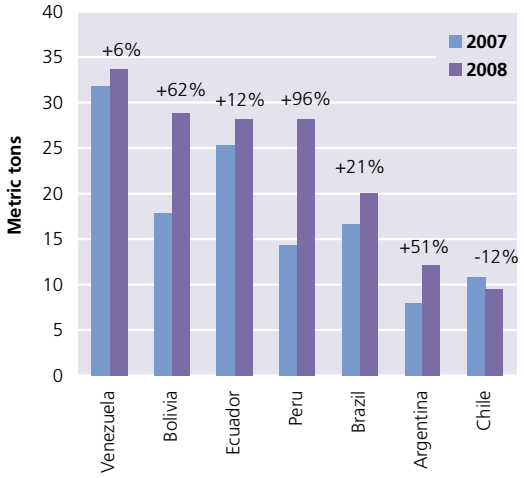


Fig. 134: Comparison of cocaine seizures in South America and other regions, 2000-2008

Source: UNODC ARQ/DELTA

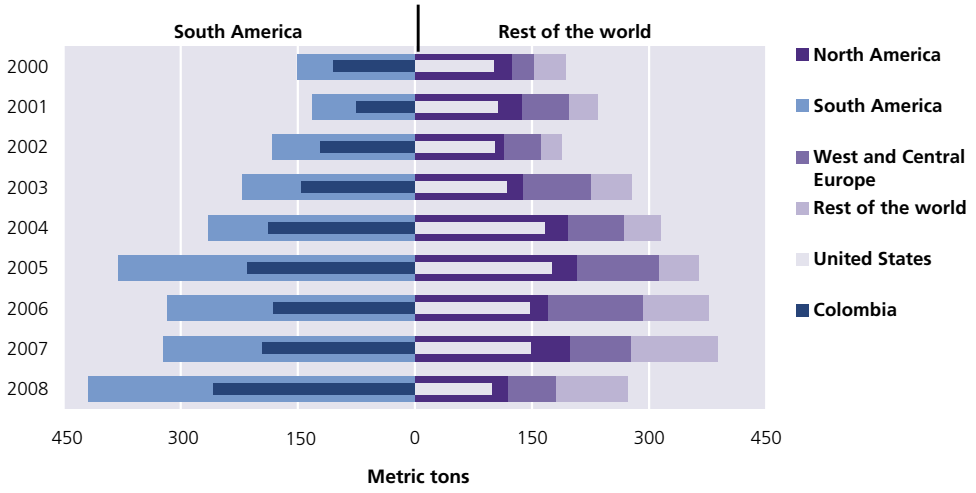
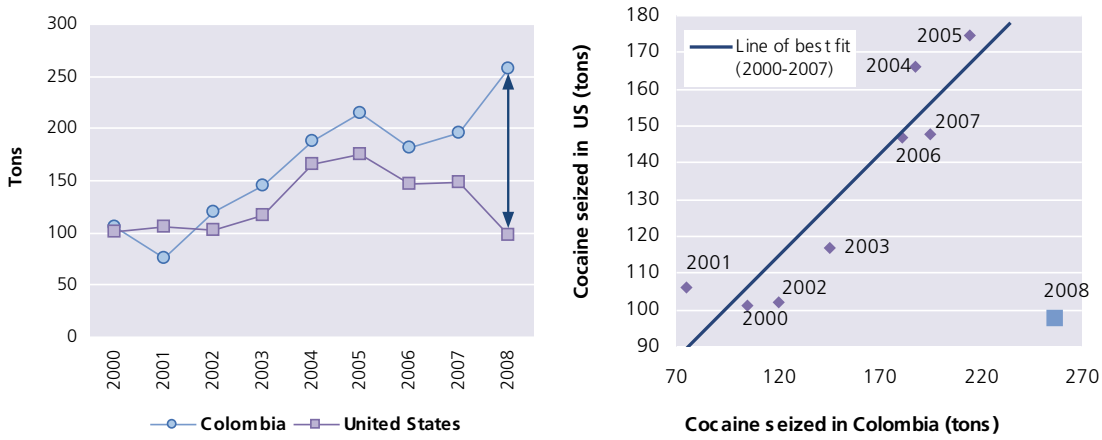


Fig. 136: Cocaine seizures in Colombia and the United States, 2000-2008

Source: UNODC ARQ/DELTA

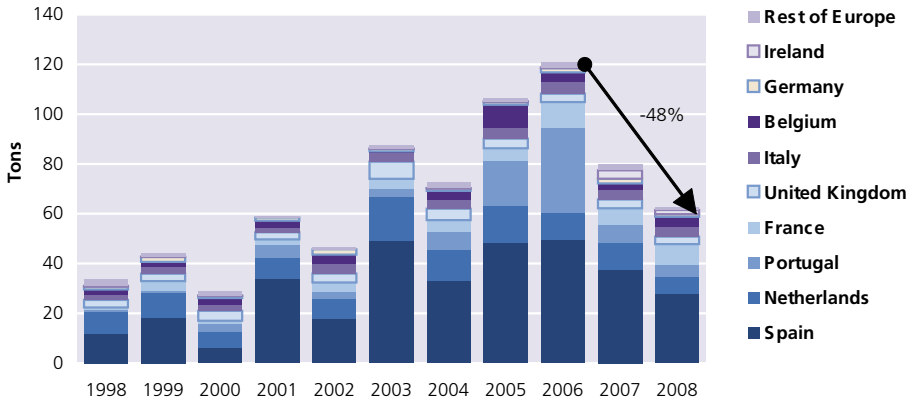


From 2002 onwards, Colombia and the United States consistently registered the largest and second largest annual cocaine (base and salts) seizures worldwide, respectively. Over the 2002-2007 period, cocaine seizures in the United States, the country with the largest consumer market for cocaine, were in line with those in Colombia, the country with the largest manufacture of cocaine, to a remarkable degree (with a correlation coefficient of 0.96). However, the trends in the two countries diverged in 2008. Seizures in Colombia reached record levels, rising from 195 mt in 2007 to 257 mt[5] in 2008, while seizures in the United States fell sharply, from 148 mt in 2007 to 98 mt in 2008 (-34%).

Mexico continued to be the key transit country for large quantities of cocaine trafficked from the Andean region to the United States. In line with the trend in the United States, cocaine seizures in Mexico fell sharply in 2008, amounting to 19.3 mt. Cocaine seizures by authorities in the United States along the border with Mexico followed a generally decreasing trend between the last quarter of 2005 and the second quarter of 2008,[6] suggesting that the amount of cocaine reaching the United States through the border with Mexico was in decline. In fact, between 2006 and 2008, cocaine seizures along this border fell by more than 40%. Partial data suggests that the decreased level was essentially sustained into

Fig. 137: Cocaine seizures in Europe, 1998-2008

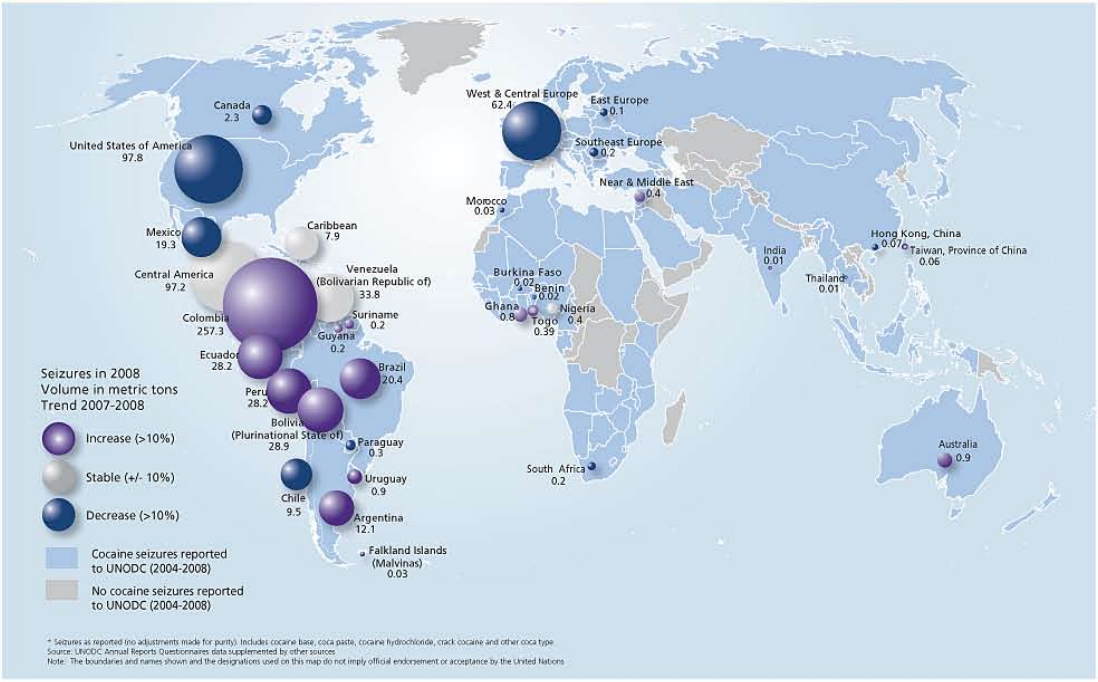
Source: UNODC ARQ/DELTA



5 Observatorio de Drogas de Colombia. Data for Colombia from the ARQ (part III) for 2008 were not available.

6 National Drug Intelligence Center, United States Department of Justice, *National Drug Threat Assessment 2009*, December 2008.

Map 19: Seizures of cocaine, 2008 (countries reporting seizures* of more than 10 kg)



2009, while seizures of other drugs (heroin, marijuana and methamphetamine) clearly increased along the south-western border over the 2006-2009 period.[7]

Seizures continue to decline in Europe

The market for cocaine in Europe has undergone a significant expansion since the year 2000, in terms of both supply and demand. Annual cocaine seizures in Europe averaged 35.5 mt over the period 1998-2000 and 102 mt over the period 2005-2007.

The recent short-term developments in the European cocaine market are less straightforward to interpret. Seizures in Europe climbed to 121 mt in 2006, but since then, fell twice in succession, standing at 62.7 mt in 2008. This is a decline of 48% over a two-year timespan. The three countries reporting the highest seizures in Europe in 2007, namely Spain, Portugal and the Netherlands, all registered significant decreases in 2008. Seizures fell from 37.8 mt to 28.0 mt in Spain (the country's second consecutive year-on-year decrease), from 10.5 mt to 6.8 mt in the Netherlands, and from 7.4 mt to 4.9 mt in 2008 in Portugal (also the second consecutive year-on-year decrease).

7 National Drug Intelligence Center, United States Department of Justice, *National Drug Threat Assessment 2010*, February 2010.

A reduced role for West Africa in cocaine trafficking

Since the year 2004, Africa, especially West Africa, has assumed an important role as a transit area for cocaine being trafficked from South America to Europe. How-

Fig. 138: Cocaine seizures in Africa, 1998-2008

[a]The unconfirmed quantity refers to a single major seizure, in which a follow-up analysis failed to confirm the presence of controlled substances. This quantity is not included in the national, regional or global totals for 2006 as reported by UNODC.

Source: UNODC ARQ/DELTA

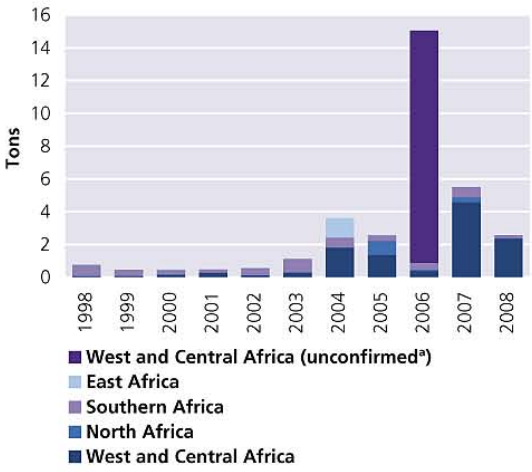


Fig. 139: Distribution of number of cocaine seizure cases in Europe, by transit/ origin country,* 2000-2008.

* This refers to the source of the cocaine as far back as it could be traced by the reporting countries.

Source: UNODC Individual Drug Seizures database

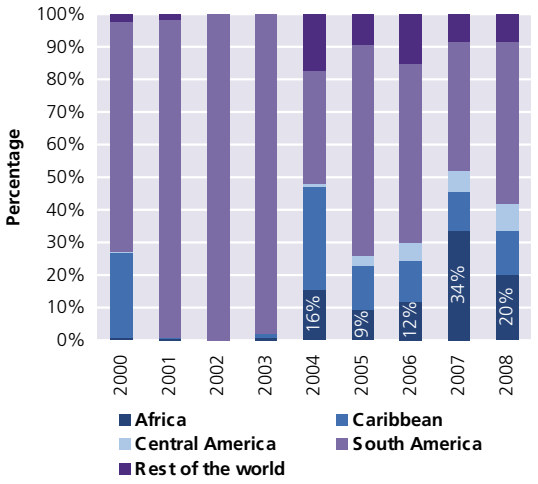
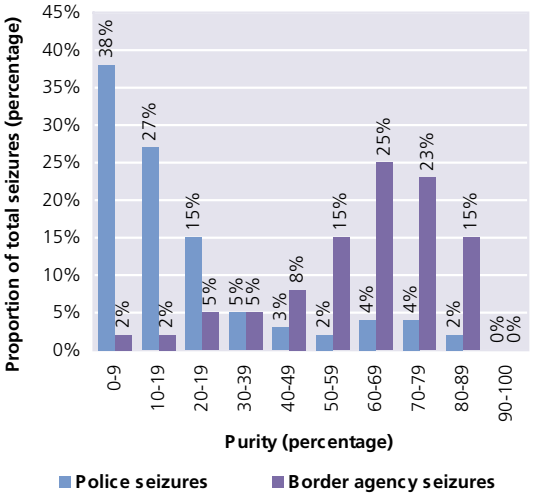


Fig. 140: Frequency distribution of cocaine purities in the United Kingdom, January-September 2009

Source: Forensic Science Service, UK



ever, seizure data suggest that this pattern may have started to subside. Cocaine seizures in West and Central Africa increased from 98 kg in 2002 to 4.6 mt in 2007, but in 2008 declined to 2.3 mt.

An analysis of cocaine consignments seized in Europe based on the UNODC individual drug seizure database confirms this picture. Among those cases in which the point of origin was identified, the proportion of cases in which African countries (or Africa as a whole) were named as the point of origin was negligible until 2002, climbed to 34% by 2007 but fell back to 20% in 2008.

Increased cocaine trafficking in Australia

Cocaine seizures in Australia rose steadily over the period 2005-2008, from 87.5 kg in 2005 to 930 kg in 2008. With reference to the period 1 July 2007 – 30 June 2008, Australia[8] mentioned the threat arising from trafficking and subsequent trans-shipment of cocaine from Canada, as well as the growth in trafficking through China (including Hong Kong). China has also reported a perceived increase in the use of cocaine in 2008.

Interception rate

Estimating the global interception rate for cocaine depends on a good understanding of the global supply of cocaine as well as the total amount of cocaine seized.

8 ARQ submitted by Australia for 2008.

Given the time lag incurred between cultivation of coca bush, harvesting, processing and trafficking, in a given year, supply in a consumer market such as Europe may be linked to production occurring in previous years. Moreover, the theoretical amount of pure cocaine seized can only be determined by taking into account the purity of seizures, which may vary considerably across countries and according to various factors, such as the size of the transaction (level of sale - retail versus wholesale) and the place of seizure (border versus domestic).

Taking into account these considerations, UNODC estimates an interception rate range of 37%-50%[9] for cocaine in 2008.[10] This is significantly higher than the corresponding rates for opiates, possibly due to the fact that a significant proportion of seizures is made in or close to the source countries. The range drops to 27%-33% if seizures in the three producing countries, Colombia, the Plurinational State of Bolivia and Peru are excluded.

9 This is calculated as the ratio of global seizures to global supply. Global seizures are adjusted for purity according to a weighted average, and include cocaine base, cocaine salts, coca paste and crack cocaine (but not coca leaf). Global supply is estimated by the average cocaine production in the preceding two years. The lower end of the range is obtained by considering retail purities only, and the upper end by considering wholesale purities only.

10 In previous years, UNODC estimated a single interception rate, adjusting global seizures for purity using an unweighted average of all purity data reported by Member States (retail and wholesale). This quantity was then expressed as a percentage of the cocaine production in the same year. This method produces an estimate of 42% for the year 2008.

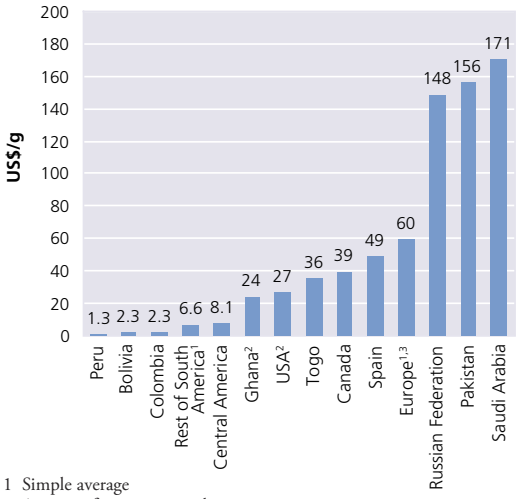
2.3.3 Prices

Cocaine prices in 2008 reflected the well-known trafficking routes from South America to North America and Europe. The lowest wholesale prices were to be found in Peru, the Plurinational State of Bolivia and Colombia. Prices were, on average, noticeably higher in the rest of South America and slightly higher in Central America and the Caribbean. There was a clear markup in prices outside Latin America and the Caribbean. Wholesale prices in West Africa were significantly higher, but lower than prices in Europe. The wholesale price in Spain was significantly lower than the average in Europe, possibly reflecting Spain's role as a major point of entry for cocaine into the European market. Very high wholesale prices were registered in Saudi Arabia, Pakistan and the Russian Federation. The markup from wholesale to retail price can be more clearly observed when typical prices are adjusted by typical purities.

A comparison of prices in the producer countries and major consumer markets shows a markup of approximately 30 times between prices of coca derivatives in the Plurinational State of Bolivia, Colombia and Peru and cocaine wholesale prices in the United States, and 60 times in the case of Europe.

Fig. 141: Cocaine wholesale prices worldwide, 2008

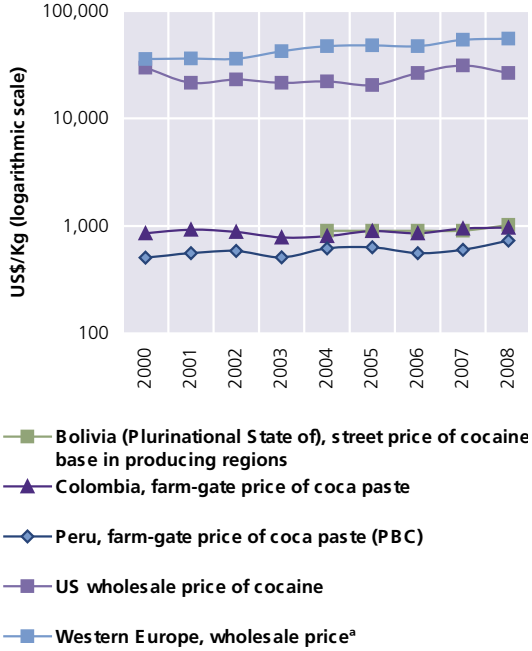
Source: UNODC ARQ



1 Simple average
2 Average of minimum and maximum price
3 Excluding Spain and the Russian Federation

Fig. 142: Comparison of coca derivative prices in producing countries and consumer markets, 2000-2008 (US dollars)

[a]Weighted average of 18 countries.
Sources: National monitoring systems in the Plurinational State of Bolivia, Colombia and Peru and UNODC ARQ



In the United States, after a sharp increase in prices and decrease in purity, 2009 brought the first signs of stabilization

In the United States, price and purity data confirmed the reduced availability of cocaine. Data from the US Drug Enforcement Agency point to a distinct transition between the fourth quarter of 2007 and the fourth quarter of 2008, with purity dropping by 27% and the price per pure gram of cocaine rising by 72%, suggesting a shortage of cocaine in the US market. The increased price level was sustained into the third quarter of 2009,[11] when it appeared to stabilize at the higher levels.

11 US Department of Justice, *National Drug Threat Assessment 2010*. Based on data extracted from System To Retrieve Information on Drug Evidence (STRIDE).

Fig. 143: Purity-adjusted and non-adjusted cocaine retail and wholesale prices in US dollars, 2008 (log-log scale)

Note: On a linear scale, the slope of the line of best fit (through the origin) for purity-adjusted prices is 2.94. This means that, overall, there is a markup in price of 194% from wholesale to retail level.
Source: UNODC ARQ

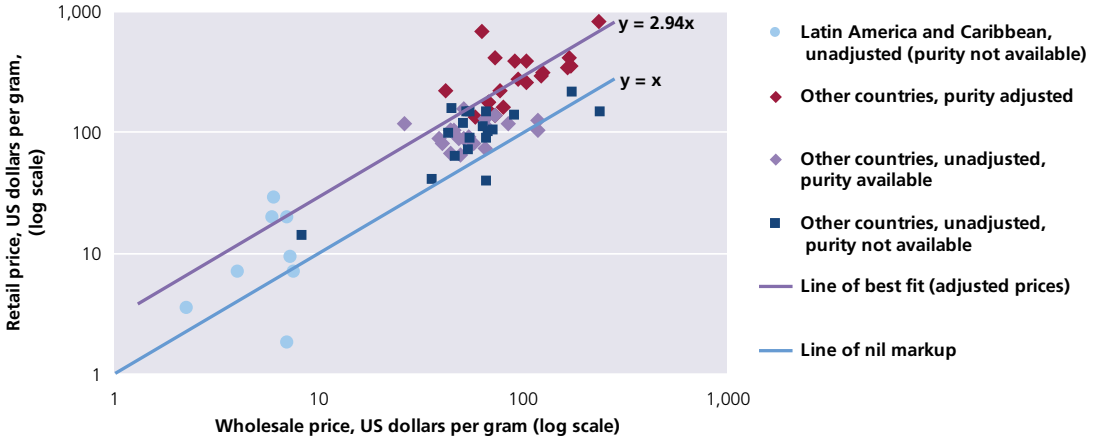
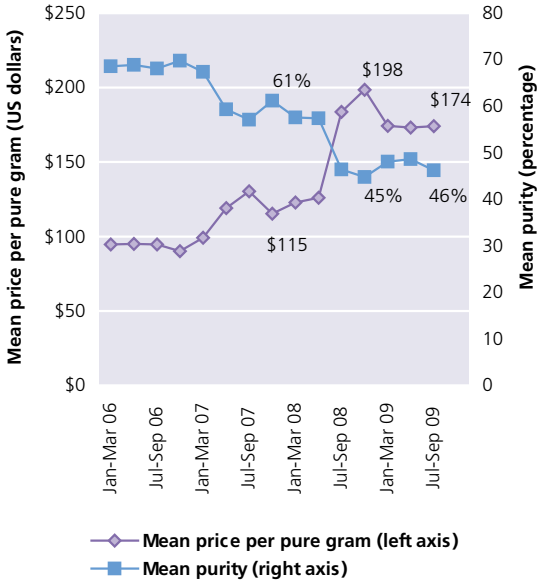


Fig. 144: Cocaine prices and purities in the United States, 2006-2009 (STRIDE*)

*STRIDE is a database of drug exhibits maintained by the US Drug Enforcement Administration. The values reported here represent averages of all cocaine purchases in the database. Although not collected as a representative sample of the US market, STRIDE data reflect the best information available available on changes in cocaine price and purity in the US market.
Source: *National Drug Threat Assessment 2010*, United States Department of Justice



Mixed picture in Europe

Prices per pure gram of cocaine for European countries were generally not available. On average,[12] European cocaine prices, expressed in euro and adjusted for inflation (but not for purity), displayed a decreasing trend over the period 2006-2008, at both the retail and wholesale levels. However, over the same period, prices increased when expressed in dollars and adjusted for inflation, suggesting that the trend has been more sensitive to the exchange rate between US dollar and euro than changes in the market.

A comparison of purity- and inflation-adjusted prices[13] with cocaine seizures in selected European countries suggests a certain sensitivity of prices - notably at the retail level - to success in interdiction, as measured by seizure totals. In 2006, European seizures peaked, along with the purity- and inflation-adjusted retail price in France, Germany and the United Kingdom. This was due to a change in purity in some cases and a change in bulk price in other cases. Since 2006, the purity- and inflation-adjusted retail price declined, in line with seizure totals. One possible explanation for the correlation between the trends in price and seizures could be related to the effect of law enforcement activities: the stronger the effect of law enforcement, the higher are the amounts seized and the associated risk of trafficking which take the price to a higher level.[14]

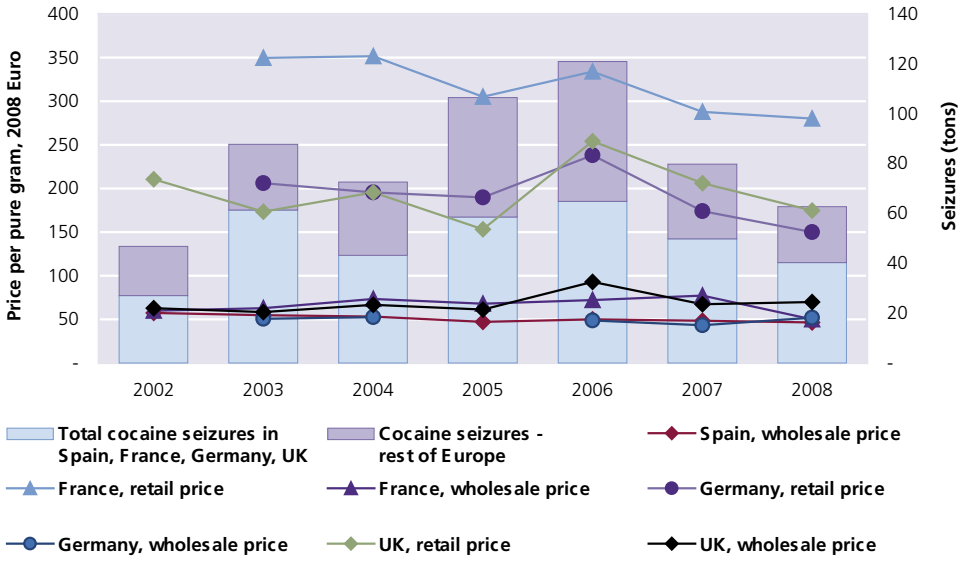
12 Weighted average of 18 European countries, based on ARQ, data from Europol and UNODC estimates; see UNODC, *World Drug Report 2009*.

13 UNODC estimates based on reported prices and purities.

14 In contrast, over the period 2000-2006, rising seizures in Europe

Fig. 145: Purity- and inflation-adjusted cocaine prices in selected European countries, in comparison with cocaine seizures

Note: Purity-adjusted prices are UNODC estimates based on reported prices and purities
Sources: UNODC ARQ, Europol, EMCDDA, UNODC *World Drug Report 2009*



went hand in hand with falling cocaine prices (weighted average for 18 European countries, not adjusted for purity), suggesting that seizures were reflecting the rising supply of cocaine reaching the European market.

2.3.4 Consumption

UNODC estimates that the prevalence of cocaine use worldwide in 2008 ranged from 0.3% to 0.4% of the adult population, or between 15 and 19 million people who had used cocaine at least once in the previous year. Compared to 2007, the range shifted to lower levels, suggesting a decrease in the global number of cocaine users. This change is due to the decrease in the number of cocaine users in North America. In addition, missing data and/or absence of recent reliable estimates affect many regions, particularly East Africa, Central Asia, the Near and Middle East and South Asia. Available qualitative information suggests that the prevalence of cocaine use is low in most parts of Asia, although Chinese experts reported a recent increase of cocaine use in their country (though starting from an almost negligible level)[15] and other countries have reported increasing trafficking of cocaine in Asia.

Table 22: Estimated number of people who used cocaine at least once in the past year and prevalence among the population aged 15-64, by region, 2008

Region/subregion	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population aged 15-64 (lower)	-	Percent of population aged 15-64 (upper)
Africa	1,020,000	-	2,670,000	0.2	-	0.5
Eastern Africa	Subregional estimate cannot be calculated					
North Africa	30,000	-	50,000	<0.1	-	<0.1
Southern Africa	290,000	-	900,000	0.3	-	0.8
West and Central Africa	640,000	-	830,000	0.4	-	0.5
Americas	8,720,000	-	9,080,000	1.4	-	1.5
Caribbean	110,000	-	320,000	0.4	-	1.2
Central America	120,000	-	140,000	0.5	-	0.6
North America	6,170,000	-	6,170,000	2.0	-	2.0
South America	2,330,000	-	2,450,000	0.9	-	1.0
Asia	430,000	-	2,270,000	<0.1	-	0.1
Central Asia	Subregional estimate cannot be calculated					
East/ South-East Asia	390,000	-	1,070,000	<0.1	-	0.1
Near and Middle East	Subregional estimate cannot be calculated					
South Asia	Subregional estimate cannot be calculated					
Europe	4,570,000	-	4,970,000	0.8	-	0.9
Eastern/South-East Europe	470,000	-	840,000	0.2	-	0.3
Western/Central Europe	4,110,000	-	4,130,000	1.5	-	1.5
Oceania	330,000	-	390,000	1.4	-	1.7
Global	**15,070,000**	**-**	**19,380,000**	**0.3**	**-**	**0.4**

15 ARQ submitted by China for 2008.

Fig. 146: World annual cocaine users

Source: UNODC ARQ

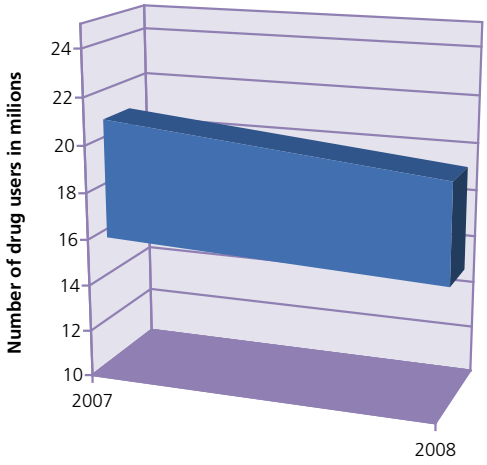


Fig. 147: Cocaine use: lower and upper range of numbers and annual prevalence globally and by region

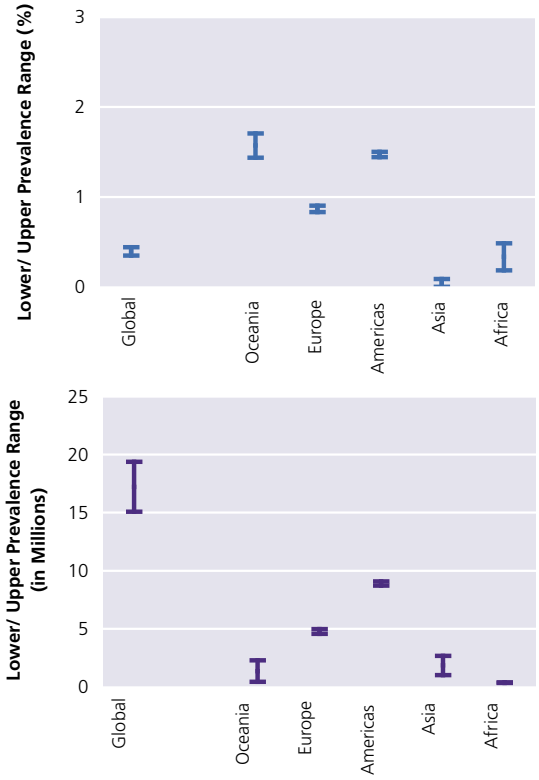


Fig. 148: Global trend in the perception of cocaine use: unweighted average of trends as reported by national experts*

* The graph measures the trend of the number of countries reporting an increase or decrease in drug use (not the trend in number of drug users).

Source: UNODC ARQ

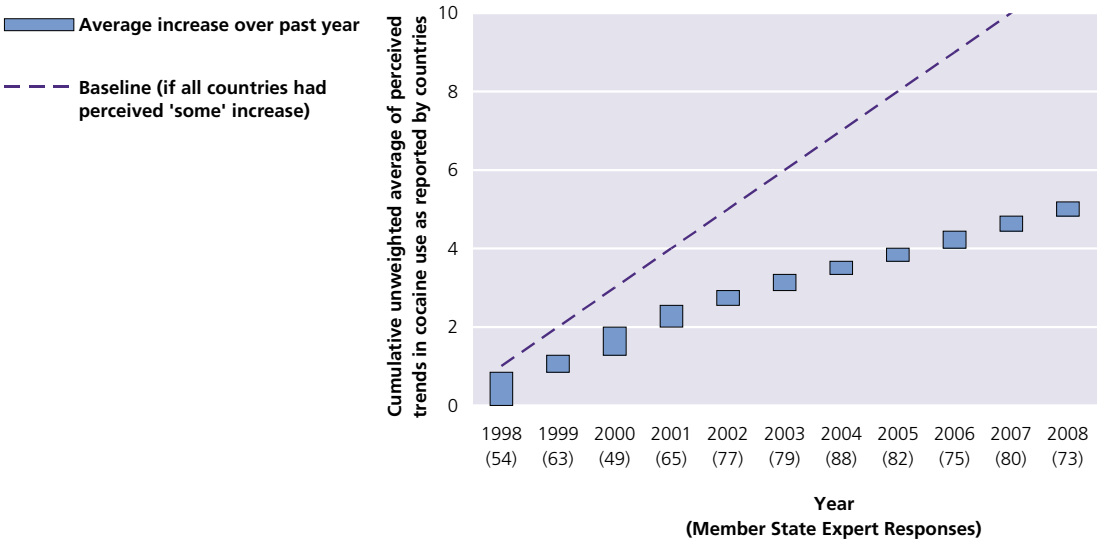


Fig. 149: United States: Annual prevalence of cocaine use among the population aged 12 and older

Source: Substance Abuse and Mental Health Services Administration, *Results from the 2008 National Survey on Drug Use and Health, National Findings,* Office of Applied Studies (OAS), US Department of Health and Human Services

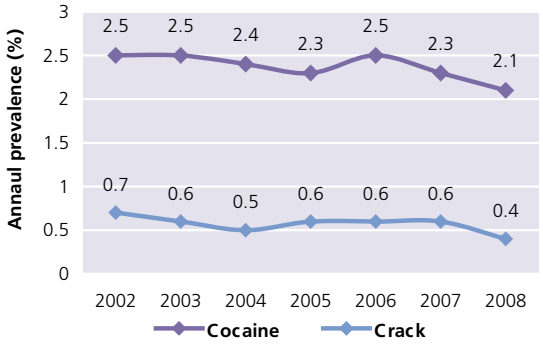
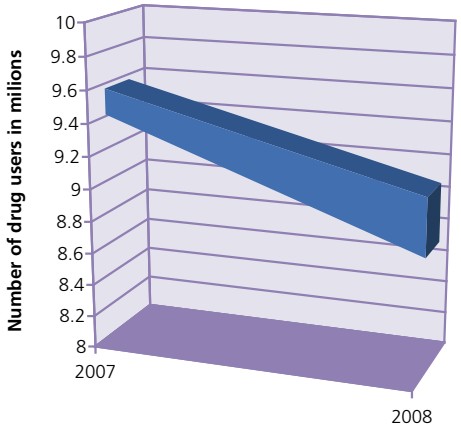


Fig. 150: Annual cocaine users in the Americas

Source: UNODC ARQ

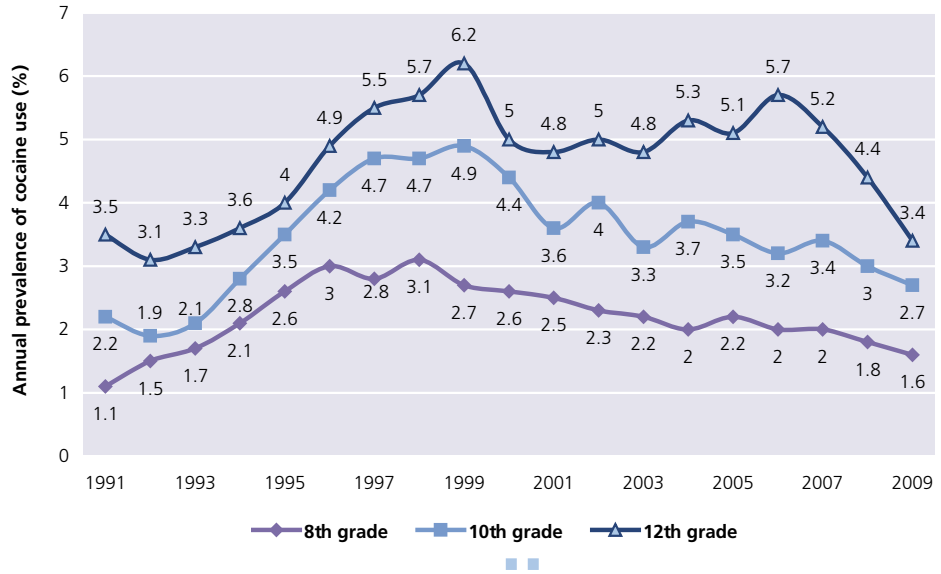


North America, the largest cocaine market, is shrinking

The highest prevalence of cocaine use remains in North America, at 2% of the adult population aged 15 to 64. In the United States, many indicators show a downward trend in cocaine use over the past years, which mirrors a decreasing trend in cocaine production in Colombia, the source country of the cocaine reaching the United States, as well as increased difficulties faced by the Mexican drug cartels to have cocaine shipped from Colombia via Mexico into the United States. Data from 2008 confirm the decreasing trend both in the adult and young populations. There has been a significant reduction in the use of cocaine and crack among the population aged 12 and older. The annual prevalence of cocaine use declined to 2.1% in 2008 from 2.3% in 2007. The perceived easy availability of cocaine among youth aged 12 to 17 also decreased significantly, from 25% in 2007 to 22.1% in 2008.[16]

Fig. 151: United States: annual prevalence of cocaine use among high school students, 1991-2009

Source: National Institute on Drug Abuse, *Monitoring the Future, Overview of key findings in 2009*, Bethesda, Maryland, USA, 2009



16 Substance Abuse and Mental Health Services Administration *Results from the 2008 National Survey on Drug Use and Health, National Findings,* Office of Applied Studies (OAS), SAMHSA, US Department of Health and Human Services, September 2009.

Fig. 152: Percent testing positive for cocaine in urine drug tests of the general US workforce (percent of all such tests)

Source: Quest Diagnostics, *Drug Testing Index*

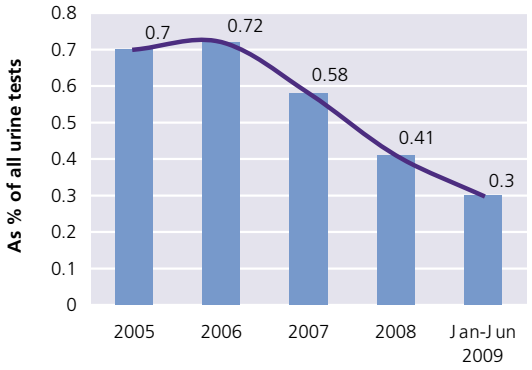
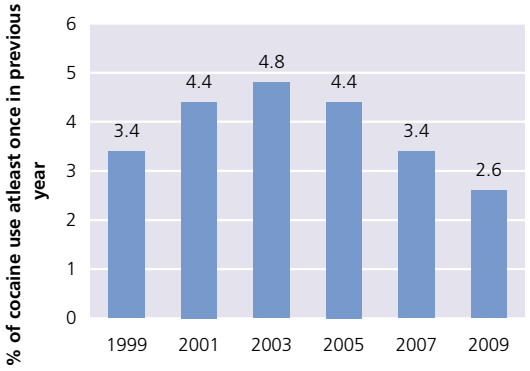


Fig. 153: Annual prevalence of cocaine use among Ontario students, 1999-2009

Source: Centre for Addiction and Mental Health, Ontario Student Drug Use and Health Survey, *Drug use among Ontario students, 1977-2009*



Similarly, the number of positive tests for recent use of cocaine in the general workforce in the United States dropped by 29% in 2008 (a decline to 0.41% in 2008 from 0.58% in 2007 of all urine drug tests). The downward trend in cocaine use also continued in 2009, where it was observed in tests for cocaine use among the general work force in the first six months of 2009.[17] Similar downward trends were seen in the annual prevalence of cocaine use among high school students. The annual prevalence dropped from 2.8% in 2008 to 1.6% in 2009 among the 8th graders, from 3% to 2.7% among 10th graders and from 4.4% to 3.4% among the 12th grade students.[18]

The prevalence of positive test results for cocaine use among arrestees appears to be stable or declining across many of the US cities where the Arrestees Drug Abuse Monitoring Programme (ADAM II) has been implemented. There are statistically significant declines between 2003 and 2008 in two of the 10 monitored cities: Chicago and Portland. Statistically significant declines between 2007 and 2008 were observed in Indianapolis and Washington DC. Nonetheless, cocaine remained in 2008 the second most common drug among arrestees. The number of problem cocaine users or those classified with substance dependence and abuse in the household survey declined from 1.5 million in 2002 to 1.4 million in 2008 among the population aged 12 or older, although none of the changes between 2008 and previous years is statistically significant. Point estimates show a more noticeable decline between 2006 (1.7 million) and 2008 (1.4 million).[19]

17 Quest Diagnostics, *Drug Testing Index*, November 2009.

18 National Institute on Drug Abuse, *Monitoring the Future, Overview of Key Findings in 2009,* Bethesda, Maryland, USA, 2010.

19 US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, *Results from the 2008 National Survey on Drug Use and Health: National Findings,* 2009.

The 2008 Canadian survey also shows a decrease in the annual prevalence of cocaine use, falling from 2.3% of the population aged 15-64 in 2004 to 1.9% in 2008.[20] The school survey conducted in Ontario, Canada's most populous province, accounting for close to 40% of Canada's total population, also indicates a decline in cocaine use among school students. The annual prevalence of cocaine use, from its peak of 4.8% in 2003 has nearly halved to 2.6% in 2009. 44% of the students reported greater risk in trying cocaine and nearly half strongly disapproved of cocaine use. Cocaine was also reportedly less easily available than in 2007 or a decade ago.[21]

Cocaine use in Mexico increased over the 2002-2008 period. The lifetime prevalence of cocaine use among the population aged 12 to 65 doubled, from 1.2% in 2002 to 2.4% in 2008.[22] The increase in the annual prevalence of cocaine use was, however, less pronounced, from 0.35% in 2002 to 0.44% in 2008.

High prevalence rates continue to be reported in West Europe

In Europe, cocaine remains the second most used illicit drug after cannabis. The annual prevalence of cocaine use in Europe ranges between 0.8% and 0.9% of the population aged 15 – 64, or around 4.5-5 million people who had used cocaine in the past year in 2008/2009, a slight upward shift from the range reported in 2007 (4.3

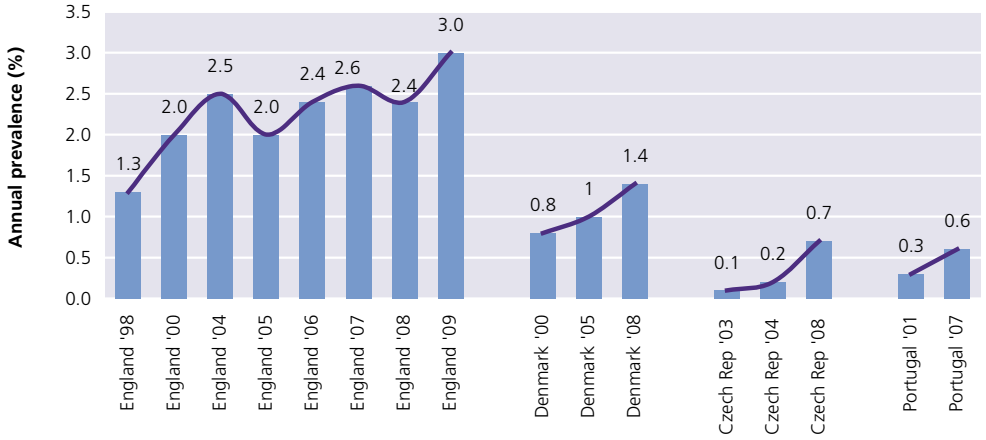
20 Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey (CADAUMS) 2008.*

21 Centre for Addiction and Mental Health, Ontario Student Drug Use and Health Survey, *Drug use among Ontario students, 1977 – 2009,* 2009.

22 SALUD, *Encuesta Nacional de Addicciones 2008,* 2009.

Fig. 154: Europe: Increasing trends in annual prevalence of cocaine use among the adult population

Source: British Crime Survey, Government reports and UNODC ARQ



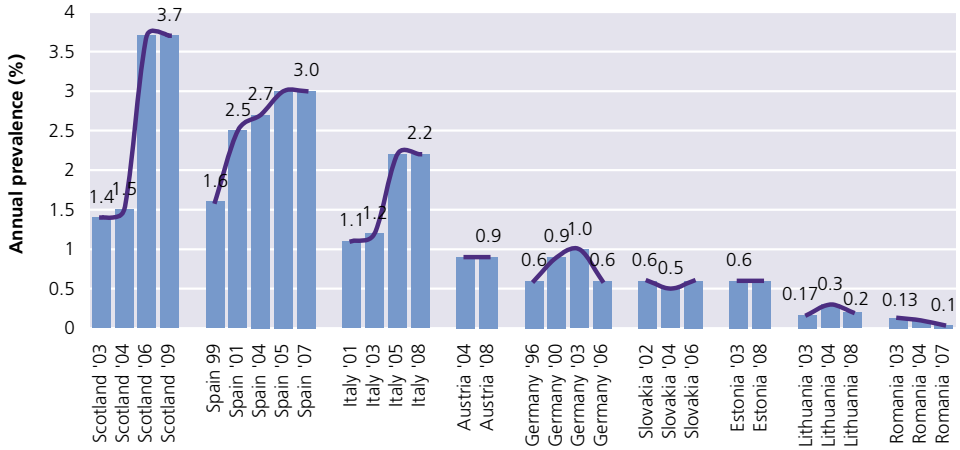
- 4.6 million people). An overall increase in cocaine use has been observed in Europe in the last decade. In recent years, the trend has started to stabilize in some countries, while in others it is still increasing.

Higher cocaine use is reported in West and Central Europe (1.5%) than in East and South-East Europe (0.3%). Cocaine use appears to be concentrated in a few countries in Europe, notably in Spain, the United Kingdom, Italy, Ireland and Denmark, where high cocaine use prevalence rates are observed. Use of cocaine is reportedly high among young males between 15 – 34 years old.[23] Low prevalence countries in the European Union remain Romania, Greece, Hungary, Poland and the Czech Republic.

In Spain and Italy, the annual prevalence rates for cocaine have stabilized at 3% and 2.2% in 2007 and 2008 respectively, after reaching high levels in 2005. A stabilization was also reported in 2007 by Germany and several other EU countries. The only major European market showing an increase is the United Kingdom. In England and Wales, cocaine prevalence rates declined in 2007/2008, but increased to 3% of the population aged 16-59 in 2008/2009. The highest prevalence of cocaine use in Europe is found in Scotland (3.7% of the population aged 16-59 in 2008/2009), even though this rate has remained stable since 2006. The United Kingdom is thus overall Europe's largest cocaine market in absolute numbers with some 1.2 million users in 2009. Increases

Fig. 155: Europe: Stable or declining trends in annual prevalence of cocaine use among the population aged 15-64

Source: Government reports and UNODC ARQ



23 EMCDDA, *Drug Situation in Europe*, Annual Report 2009.

Fig. 156: United Kingdom: Cocaine-related poisoning episodes and deaths, 2000-2008

Source: United Kingdom, The Cocaine Trade – Home Affairs Committee, *Trends in Cocaine Use*

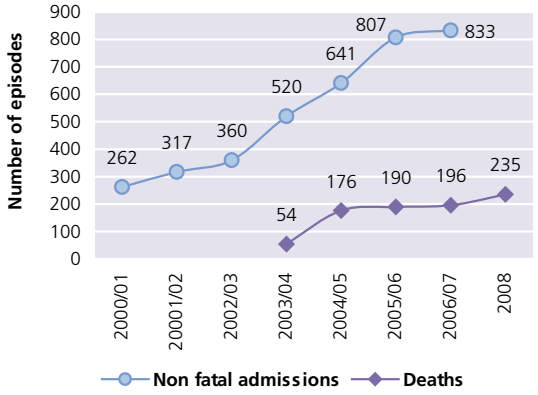
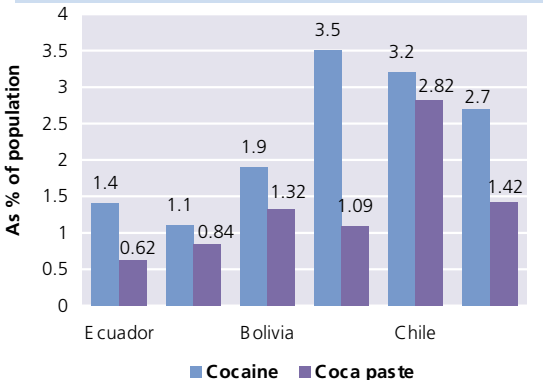


Fig. 157: South America: Prevalence of cocaine and pasta base use among students aged 13-17, selected countries

Source: UNODC/CICAD, *Informe subregional sobre uso de drogas en poblacion escolarizada*, 2009/2010



in the annual prevalence rate were also reported in Albania, the Czech Republic and Denmark over the last period. Among the six European countries that reported updated information on cocaine use for 2008, only Lithuania registered a decrease in the adult prevalence, from 0.3% in 2004 to 0.2% in 2008.

In the United Kingdom, cocaine has been a problem drug for some time. Since 2000/2001, there has been a large increase in reported episodes of non-fatal hospital admissions for cocaine poisoning in England. Since 2004, there has also been an upward trend of cocaine-related deaths, which accounted for 14% of all drug-related deaths in 2008.[24]

The lifetime prevalence of cocaine use among 15-16 year old school students in Europe[25] was on average 3%. Cocaine use, however, remains much lower than cannabis use. In half of the 28 reporting countries, in 2007, the prevalence rate ranged between 1% and 2%. Most of the remaining countries reported prevalence levels between 3% and 4%. France, Italy and the United Kingdom reported levels around 5%. Like for most other drugs, lifetime prevalence of cocaine use among males is higher than among females.[26]

The number of clients entering drug treatment with cocaine as the primary drug has been increasing in Europe for several years. Between 2002 and 2007, the largest proportional increases among new clients were reported by Spain, Ireland and Italy. In those countries the number of all clients entering treatment citing cocaine as their primary drug increased as a proportion from 13% to 19%. The proportion of cocaine clients in treatment is now also increasing in other countries such as Denmark, Ireland, Greece and Portugal.[27]

Increasing trends of cocaine use in most countries in South America

The annual prevalence of cocaine use in South America is between 0.9% and 1% of the population aged 15-64, thus comparable to cocaine use in Europe, though far lower than in North America. The aggregate annual prevalence of cocaine use in Central America ranges between 0.5% and 0.6%, and in the Caribbean, from 0.4% to 1.2%. In contrast to North America, national experts in South America continue to report an increasing trend in cocaine use.

Increases in cocaine use in recent years were reported by the Bolivarian Republic of Venezuela, Ecuador, Brazil, Argentina and Uruguay, as well as countries in Central America (Guatemala and Honduras) and the Caribbean (Jamaica and Haiti). Compared to the previous year, new quantitative information for 2008 was available only from two countries: Chile, where an increase in the annual prevalence among the adult population aged 15-64 was observed (from 1.7% in 2006 to 2.4% in 208) and Suriname, where there was a decrease (from 0.5% in 2002 to 0.3% in 2007).

The highest prevalence of cocaine use in South America

24 United Kingdom, The Cocaine Trade – Home Affairs Committee, *Trends in Cocaine Use*, March 2010.

25 European School Survey Project on Alcohol and Other Drugs (ESPAD).

26 Hibell, B., Andersson B., et al. *ESPAD: The 2007 ESPAD Report: Substance use among students in 35 European Countries,* The Swedish Council for Information on Alcohol and other Drugs (CAN), EMCDDA, Council of Europe, Co-operation Group to Combat Drug Abuse and Illicit Trafficking in Drugs (Pompidou Group).

27 EMCDDA, *Drug Situation in Europe 2009: Problem cocaine use and treatment demand*, 2009.

Fig. 158: South America: annual adult (aged 15-64) prevalence of cocaine use in selected countries, 2006-2007

Source: UNODC/CICAD, *Elementos Orientadores para las Politicas Publicas sobre Drogas en la Subregion: Primer Estudio Comparativo sobre Consumo de Drogas y Factores Asociados en Poblacion de 15 a 64 años*, 2008

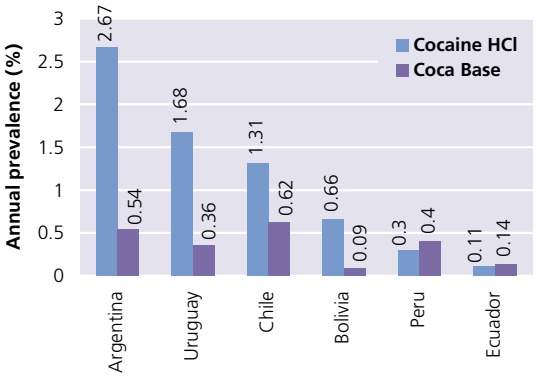
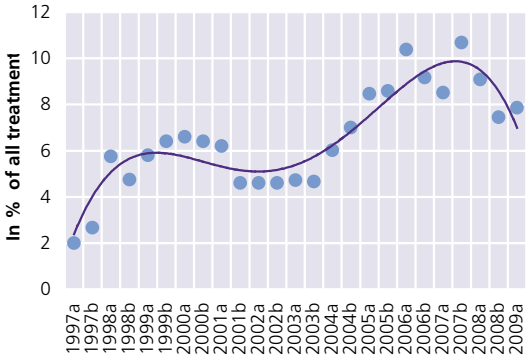


Fig. 159: South Africa: Percent of all treatment admissions for cocaine, 1997-2009

Source: Pluddemann A., Parry C., Bhana A., et al, *Alcohol and Drug Abuse Trends: January-June 2009* (Phase 26), South African Community Epidemiology Network on Drug Use, November 2009



was reported from Argentina (2.7%), followed by Chile (2.4%) and Uruguay 1.4%). The annual prevalence of cocaine use in Argentina and Chile are comparable to the prevalence in United States. Brazil and Argentina constitute the biggest cocaine markets in South America in terms of absolute numbers (more than 900,000 and 600,000 users, respectively). According to the school survey conducted by UNODC and CICAD in the South American countries, the highest annual prevalence of cocaine use among students was in Chile, followed by Uruguay and Argentina.[28] The *pasta base* or the cocaine base is also frequently abused in South America. However, both for the student and adult populations, the use of cocaine HCl is generally higher than coca paste. In Chile, the Plurinational State of Bolivia and Peru, there were comparable rates of cocaine and *pasta base* use among the students surveyed.

Experts are reporting rising cocaine use in Africa

For most parts of Africa, there are no recent or reliable estimates of cocaine use. Nevertheless, the annual prevalence of cocaine use in Africa is estimated at between 0.2% and 0.5% of the population aged 15 to 64. The upper bound of the estimate fell compared to last year when it was 0.7%. The major reason for this drop is the removal of national estimates which were more than 10 years old. However, experts from Africa report that cocaine use has increased in many parts of the continent, notably West and Central Africa. In South Africa, one of the few countries that have data to substantiate the expert perceptions, treatment demand for cocaine-related problems has shown a strong increase over the past 10 years, where it has increased from 5% of treatment demand in 1998 to 8% in the first half of 2009. However, there has been a declining trend in treatment demand for cocaine since 2008.[29]

For large parts of Asia and the Near and Middle East, there are no recent or reliable estimates available on cocaine use. In Asia, the annual prevalence of cocaine use is estimated at maximum 0.1%, or between 430,000 and 2.3 million cocaine users. Hong Kong, China is the only territory in Asia reporting new information in 2008, revealing an increase in the estimated annual adult prevalence rate from 0.003% in 2003 to 0.3% in 2008.[30] In Hong Kong, China, there are indications of increasing availability and decreasing prices of cocaine since 2004.[31] In the school survey conducted in Hong Kong, China in 2008/2009, the lifetime prevalence of cocaine and 'ecstasy' use among students was 13.8%, compared to 11.3% in 2004/2005.[32]

28 UNODC and CICAD *Informe subregional sobre uso de drogas en poblacion escolarizada,* 2009/2010.

29 Pluddemann A., Parry C., Bhana A., et al, *Alcohol and Drug Abuse Trends: January – June 2009* (Phase 26), South African Community Epidemiology Network on Drug Use, November 2009.

30 Data extrapolated from the results of a school survey.

31 Narcotics Bureau, Hong Kong Police, *Drug Situation Report – Hong Kong Special Administrative Region of the People's Republic of China,* January 2009.

32 Narcotics Division, Security Bureau, *The 2008/2009 Survey of Drug Use among Students,* 2010.

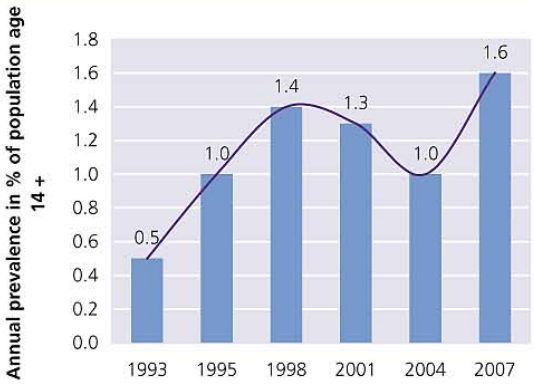
In Oceania, there are mixed trends of cocaine use

In Australia, the annual prevalence of cocaine use among the population aged 14 and above grew from 1% in 2004 to 1.6% in 2007 (or 1.9% of the population aged 15-64).[33] As reflected in data from the Australian Institute for Criminology for the *Drug Use Monitoring in Australia (DUMA),* the percentage of detainees that tested positive for cocaine remained at 1% in 2008, as in previous years.[34]

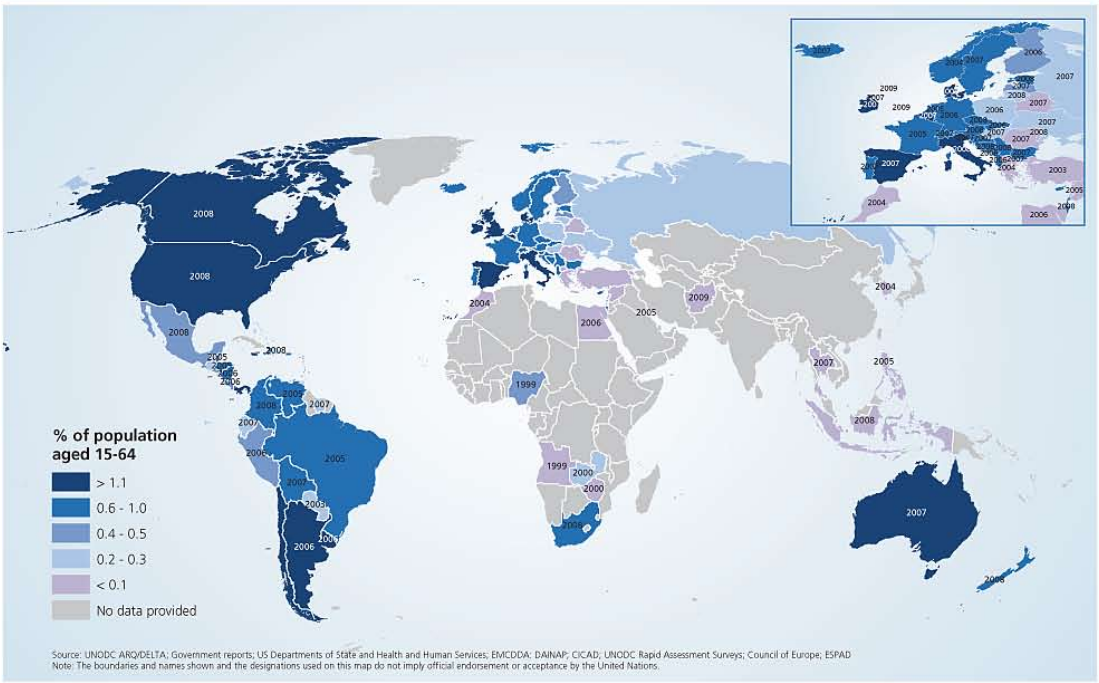
In New Zealand, cocaine use now appears to be stabilizing, having increased considerably between 2003 and 2006. In 2007/2008, about 0.6% of the population aged 16-64 had used cocaine in the previous year,[35] compared to 0.8% of the same population reported in 2006.

Fig. 160: Australia: Annual prevalence of cocaine use among the population aged 14 and above, 1993-2007

Source: Australian Institute of Health and Welfare, *2007 National Drug Strategy Household Survey*, 2008



Map 20: Use of cocaine in 2008 (or latest year available)



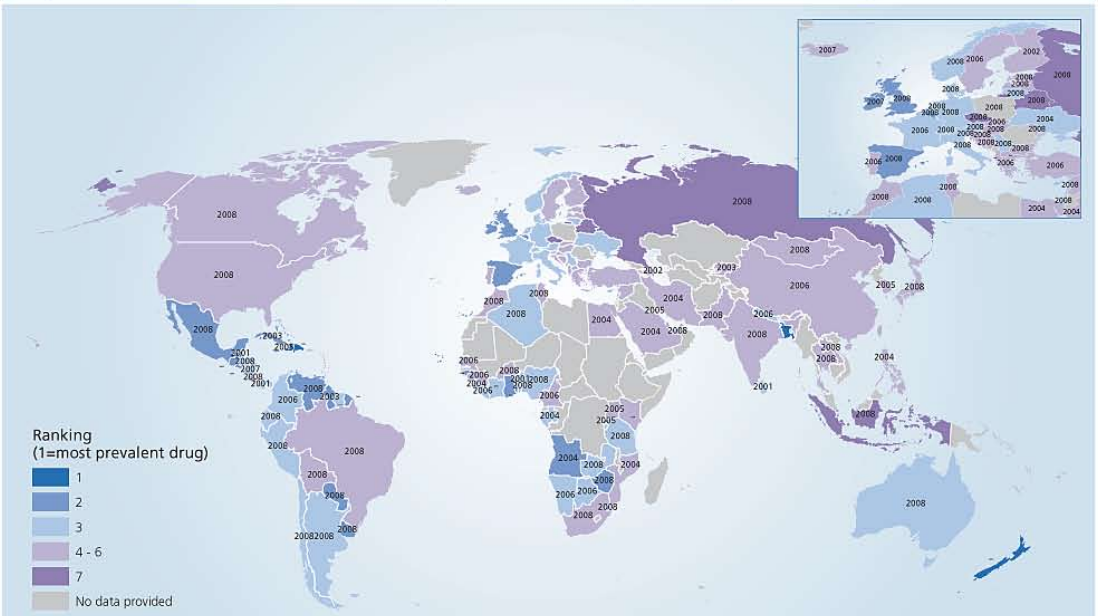
Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA; DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

33 Australian Institute of Health and Welfare, *2007 National Drug Strategy Household Survey,* Canberra,, April 2008.

34 Australian Institute of Criminology, *Drug use monitoring in Australia:2008 annual report on drug use among police detainees*, AIC Monitoring Reports 2009.

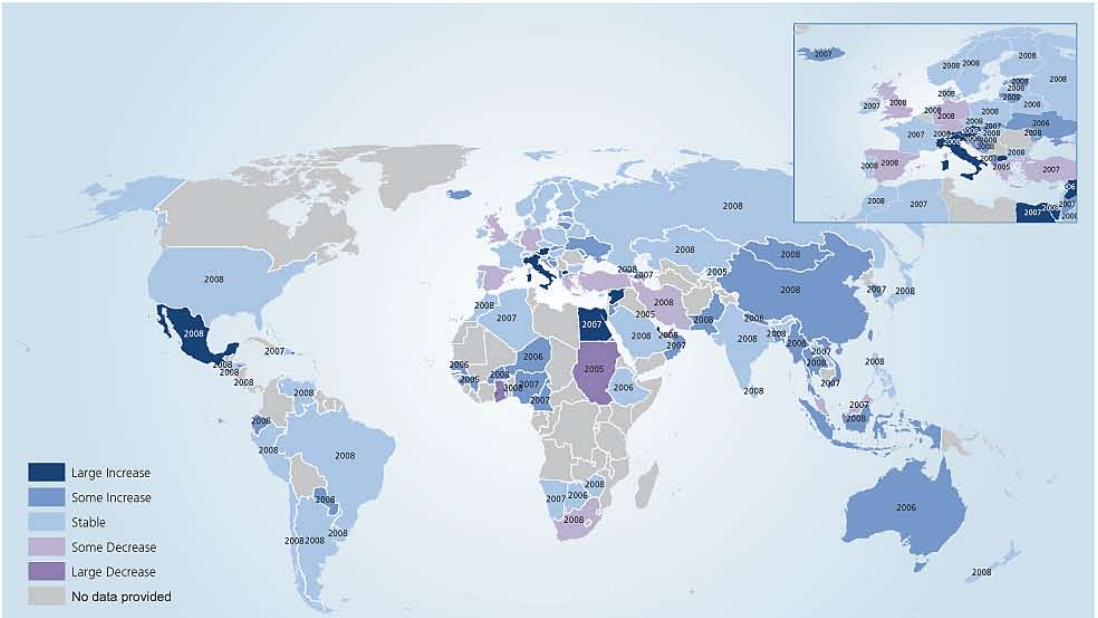
35 Ministry of Health, *Drug use in New Zealand: Key Results of the 2007/08 New Zealand Alcohol and Drug Use Survey,* January 2010.

Map 21: Ranking of cocaine in order of prevalence, 2008 (or latest year available)



Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA: DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 22: Expert perception of trend changes in the use of cocaine, 2008 (or latest year available back to 2005)



Source: UNODC ARQ
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

2.4 Cannabis

2.4.1 Production

In the *2009 World Drug Report*, UNODC presented an inventory of the available data on cannabis production and, based on four different methods, estimated that the cannabis herb production ranged from 13,300-66,100 mt and the cannabis resin production from 2,200-9,900 mt. The resulting total area under cannabis cultivation was estimated at 200,000-641,800 ha.[1] These estimates provided the magnitude of the problem related to the illicit cannabis cultivation and production, but they also showed a large range, indicating the great uncertainty around the estimates.

In this *World Drug Report*, the above-mentioned estimates were not updated; given the high level of uncertainty and the remaining lack of information in many cannabis-cultivating countries, a new round of estimations would have offered an arithmetical exercise rather than providing policy-relevant information on the global trend of cannabis production and cultivation. The trend analysis presented here focuses on some new information obtained by UNODC in the last year, with a special focus on indoor cannabis cultivation.

Cannabis cultivation and production in Afghanistan

In 2009, the major new piece of information on cannabis production relates to an important producer, Afghanistan, where the first joint cannabis survey was undertaken by UNODC and the Afghan Ministry of Counter Narcotics. The results of this survey gave a range of cultivated cannabis area from 10,000 to 24,000 ha, and a resin production range between 1,500 and 3,500 mt. In terms of production, Afghanistan would be the major producer of cannabis resin in the world. This is principally due to the high resin yields measured in Afghanistan (145 kg/ha), which are four times higher than in Morocco (36 kg/ha measured in 2005), where cannabis resin is also produced. However, it is not clear whether the products are directly comparable.

There is evidence of cannabis production in almost all countries in the world. The major source of information regarding production continues to be the responses that Member States provide to the Annual Reports Questionnaire (ARQ). Although about 50 countries have reported in the last 10 years on the actual extent of cannabis cultivation, more countries report seizures of plants and eradication of sites, which give another indication of the presence of cannabis cultivation. Other evidence can also be found through seizure statistics, where countries provide information on where the reported seizure originated.

Due to the fragmentation and incompleteness of information, it is difficult to do a proper analysis over time and reveal patterns in cannabis cultivation. However, an increase of indoor cultivation has been reported by several sources and will be analysed more closely.

Indoor cultivation

Several national studies have indicated an increasing trend of indoor cannabis cultivation instead of, or in

1 The calculation was based on the minimum and maximum levels calculated from reported cultivation and production, seizures of cannabis and user prevalence rates.

Table 23: Update of available information on the extent of cannabis cultivation and production in major producing countries, 2008*

Country	Cultivated area (ha) [a]	Eradication	Harvestable area (ha)	Production (mt) Resin	Herb
Afghanistan[b]	10,000 – 24,000 (2009)		10,000 – 24,000 (2009)	1,500 – 3,500 (2009)	
Bolivia[c]					1,831
Canada[d]					1,399-3,498 (2007)
Colombia[e]	5,000 (2006)				4,000 (2006)
Mexico		18,562 ha[g]	12,000[f]		21,500[f]
Morocco[g]	64,377	4,377	60,000	877	
Netherlands[h]		1,053,368 plants			323-766
Paraguay	6,000[i]	1,838 ha[j]			16,500[k]
South Africa[l]	1,300	1,275 ha	25		
United States of America		7.6 million outdoor plants / 451 000 indoor plants[m]			3,149-7,349

* Or other year, if mentioned.

a) In addition, there is some extraction from wild-grown cannabis, for example, areas of 124,000-329,627 ha were estimated in Kazakhstan (1999 UNDCP, Annual Survey reports Cannabis, Opium Poppy and Ephedra (Vienna, 1998 and 1999). In the Russian Federation, wild cannabis is estimated to be cultivated on 1 million ha (US Department of State, International Narcotics Control Strategy Report (INCSR) 2010).

b) UNODC, Afghanistan cannabis survey 2009, Vienna, 2010.

c) Government of the Plurinational State of Bolivia, quoted in INCSR, 2010

d) Governments of the United States of America and Canada, Drug Threat Assessment 2007, March 2008.

e) UNODC, Bulletin on Narcotics, "Review of the world cannabis situation", Volume LVIII, Vienna, 2006.

f) US Department of State, INCSR, 2010

g) UNODC, ARQ 2008.

h) KLPD-IPOL, Drug seizures and drug prices in the Netherlands, Zoetermeer, The Netherlands, 2008.

i) Secretaria nacional Antidrogas (SENAD), (Asunción, 2008).

j) UNODC ARQ 2008.

k) Secretaria nacional Antidrogas (SENAD), (Asunción, 2008).

l) UNODC, ARQ 2008.

m) DEA, Domestic Cannabis Eradication/Suppression Program (DCE/SP) in National Drug Threat Assessment 2010.

addition to, outdoor growing.[2] Indoor growing has the benefit of having lower chances of detection,[3] high yields with several harvests per year[4] with high potency cannabis[5] and elevated selling prices. The equipment, knowledge and seeds for indoor growing have become very accessible, for example, from so-called 'grow shops' or from the internet. The costs of building an indoor growing site can be quickly recovered, which makes indoor cultivation a very lucrative business.

Based on government reports and scientific literature, UNODC could find evidence of indoor cultivation for commercial purposes in 29 countries, concentrated in the temperate zones of the world: North America, West, North and Central Europe and Oceania. There was only one report of indoor growing in South America (Argentina) and one in Africa (South Africa). Given the lack of a system to monitor indoor cannabis cultivation worldwide, these 29 countries represent the minimum set of indoor cannabis cultivating countries.

With the available data, it is not possible to calculate the extent of indoor growing. Often indirect indicators are used to estimate the trend, such as the number of seized

2 European Monitoring Centre for Drugs and Drug Addiction, *Monograph series 8, Volume 1*, Lisbon, 2008.

3 In Canada, a detection rate of 2-3% is estimated. Bouchard, M., *Journal of Quantitative Criminology 23*: (3): 221–241, 2007.

4 The controlled conditions often allow for up to six harvests per year.

5 The controlled conditions (often hydroponically grown) normally give higher potency of the product, for example, in the production of sinsemilla. Sinsemilla are the unfertilised buds of the female plants which contain the highest concentration of THC. Controlled conditions include the use of optimal varieties and plants, optimal dosage and timing of providing water, nutrients and light.

Cannabis resin processing in Afghanistan

In 2009, a first cannabis survey was carried out by UNODC and the Afghan Ministry of Counter Narcotics to estimate the extent of cannabis cultivation and production in Afghanistan. The survey covered 20 provinces where cannabis cultivation had been reported. Information was collected from satellite images and interviews with village headmen and farmers in 1,634 villages.

The complex area of cannabis resin yield was investigated with focus group interviews in more than 45 villages. The yield study included observation of the actual production of resin, which is a process of threshing and sieving the dried cannabis plants to produce a powdery substance locally called 'garda'. Garda consists of cannabis resin as well as other plant material. Based on the quantity and quality of the resin, garda is categorized as first, second, third (and sometimes even fourth) grade.

At least two farmers are involved in the production of garda. First, they beat the dried cannabis plants on a barrel to separate the buds from the main branches. Then, the dried buds, leaves and seeds are separated, after which the farmers sift the product through a wooden sieve kept in an inclined position. After sieving, they put the product in a bag made of cloth, which is shaken for about five minutes. Most of the dust is filtered out during this process. The sieving takes place three times. The remaining powder is split and put into smaller bags. A small quantity of powder is put in a cloth pouch and beaten by hand to remove the remaining dust. This product is called first garda.

Regional differences exist in the processing techniques which give different products and quality levels varying with the amount of resin and plant rests. Generally, the north, north-east and west of the country produce higher quality garda but in smaller amounts, whereas the south and east have a larger production of the first garda but with lower quality.

Most farmers sell the garda in its powdery form, but it needs another transformation to produce consumable hashish, which is usually done by traders.

Table 24: Potential cannabis resin garda production, 2009

	1st garda (mt)	2nd garda (mt)	3rd garda (mt)	4th garda (mt)	Rounded total (mt)
Lower limit	693	471	287	19	1,500
Upper limit	1,648	1,120	683	45	3,500
As % of total garda	47%	32%	20%	1%	100%

Source: UNODC/Afghan Ministry of Counter Narcotics, *Afghanistan cannabis survey 2009*

plants or the number of seizures of plantations. Since the way of reporting is not consistent between countries, and often not even within one country, it is challenging to compare the production levels.[6]

For some countries, for example, Australia, New Zealand, the United Kingdom and the Netherlands, indoor growth is known to be the main method of cannabis production. From the Netherlands, indoor cultivation has spread to surrounding countries, for example to Belgium, where there is an increase of seized indoor plants, to East Europe (the Czech Republic, Poland, Hungary and Slovakia) and Austria, and to northern Europe (Iceland, Finland, Denmark, Norway, Sweden and Latvia). The increases in cultivation are often attributed to Vietnamese organized crime groups.[7] In Canada also, Vietnamese/Chinese groups - as well as Hell's Angels - are involved in cannabis cultivation, including high-tech indoor cannabis growing. The Canadian production is for national consumption, but some is also exported to the United States. In the United States, indoor growing has become significant, but seizures of outdoor-grown plants still exceed the indoor-grown plants.

6 Moreover, there is no protocol for the reporting, which makes the numbers hard to compare within countries. The number of plants often do not differentiate for the type of plant, for example, whether the numbers are full grown plants or include seedlings and cuttings. Research in the Netherlands indicate that this can give large divergence in the reports (see: Wouters, Korf and Kroeske, *Harde aanpak, hete zomer*, WODC, Amsterdam, 2007).

7 UNODC ARQ 2008; INCSR 2010; Europol, *EU Organised crime threat assessment*, 2009.

Map 23: Cannabis cultivation in the world; an inventory of evidence collected between 1998 and 2008

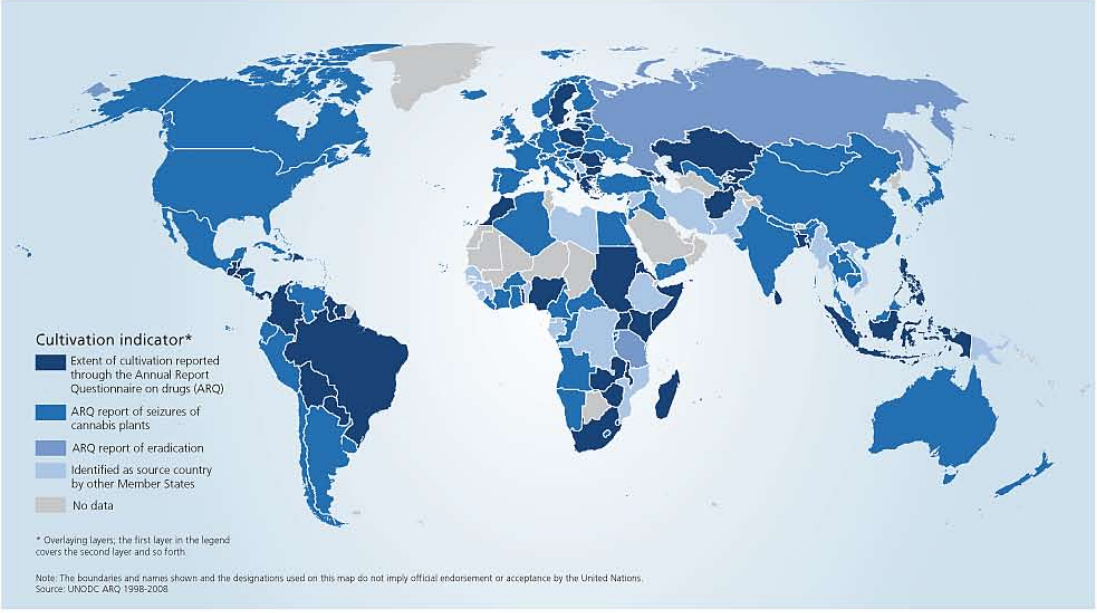
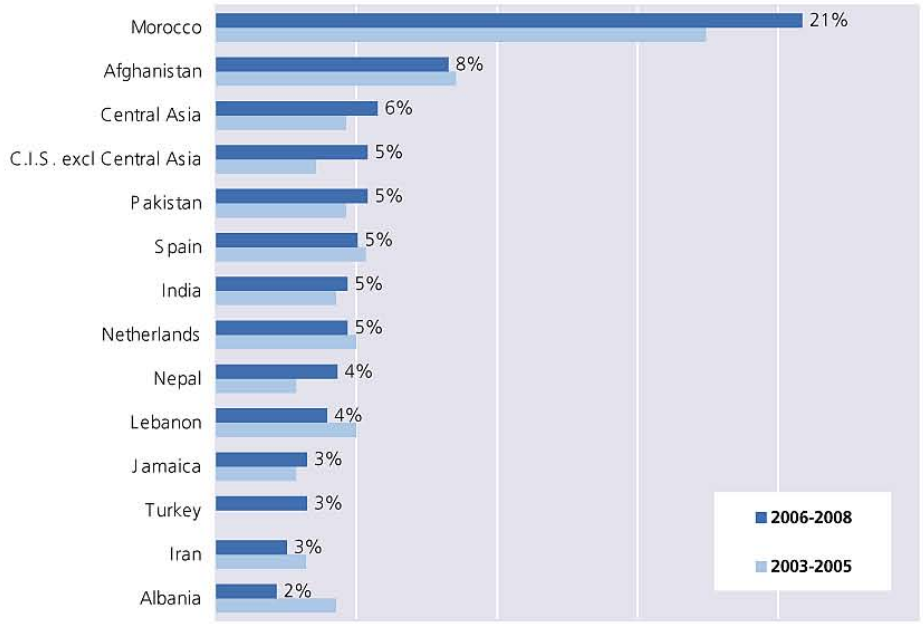
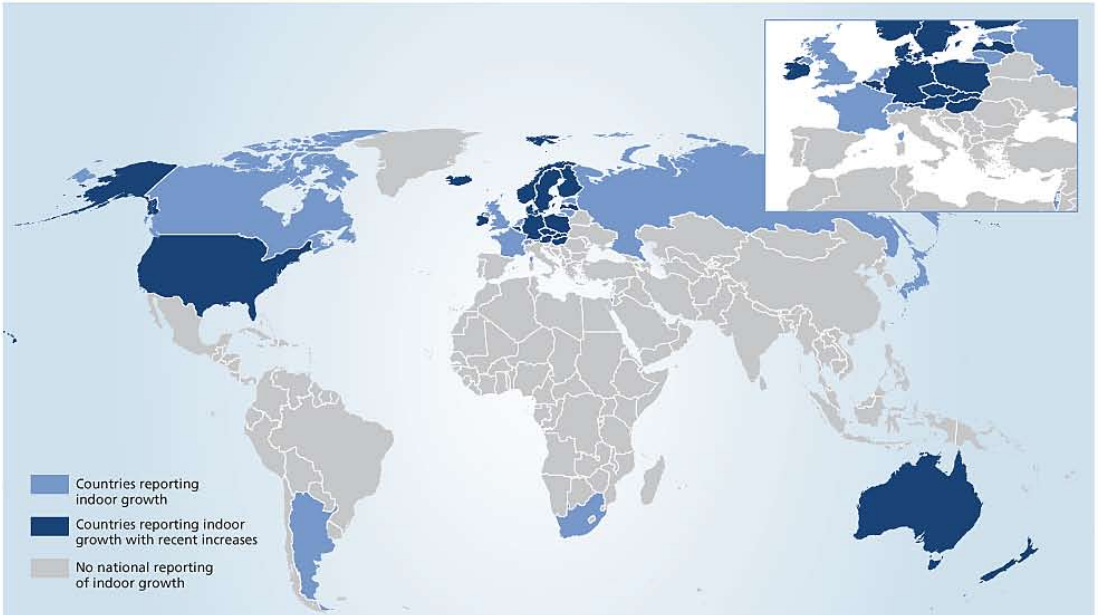


Fig. 161: Main source countries of cannabis resin reported to UNODC in the periods 2006-2008 and 2003-2005*

* Number of times that countries were identified as source countries, represented as proportion of countries reporting.
Source: UNODC ARQ 2003-2008



Map 24: Evidence of indoor cannabis cultivation in the world



Sources: UNODC, ARQ 2008; National reports to the INCB 2007-2009; INCSR 2010; Thirty-third Meeting of Heads of National Drug Law Enforcement Agencies, Asia and the Pacific, (Denpasar, Indonesia, 6-9 October 2009); Kilmer and Hoorens, Understanding illicit drug markets, supply- reduction efforts, and drug-related crime in the European Union, RAND Europe, 2010; REITOX reports, National Reports to the EMCDDA, 2009; OAS, Multilateral Evaluation Mechanism, 2008; Netherlands Police Agency (KLPD-IPOL)

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Fig. 162: Number of eradicated plants in several countries, 2004-2009

Source: US Department of Justice; National Police Agencies in Belgium and the Netherlands. In the Netherlands, the number of dismantled sites has been rather stable (about 5,000 sites per year) for the last three years but the number of seized plants has shown a decrease, which may be largely determined by the exclusion of seedlings and cuttings from the number of plants

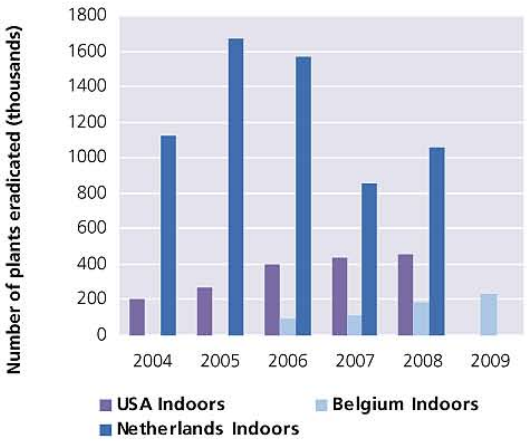
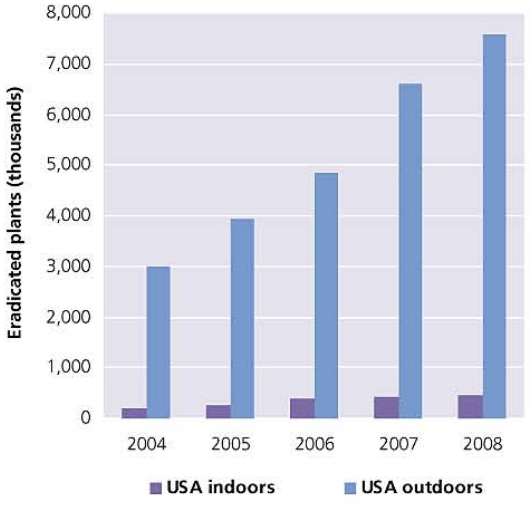


Fig. 163: Eradicated cannabis plants at indoor and outdoor cultivation sites in the United States, 2004-2008

Source: US Department of Justice, *National drug threat assessment 2010*, February 2010



2.4.2 Seizures

Trafficking of cannabis derivatives continues to affect most countries worldwide. Of the 147 countries and territories for which UNODC collated records of drug seizures in 2008, 137 had seized at least one of the cannabis derivatives: 129 had made seizures of cannabis herb, 92 of cannabis resin, and 26 of cannabis oil. Based on 2003-2008 data, approximately one half of seizure cases related to all illicit drugs worldwide involved cannabis herb, resin or oil. Cannabis herb was the most frequently seized drug[8] in Africa, the Americas and Oceania, while cannabis resin was the most frequently seized drug in Europe, followed by cannabis herb.

Cannabis herb

Global cannabis herb seizures rose gradually but steadily over the period 2005-2008, reaching 6,587 mt in 2008, slightly exceeding the peak level attained in 2004 (6,539 mt). The Americas continued to be the region with the highest share of global seizures, followed by Africa. Significant increases were registered in South America, Africa, Asia and Europe.

From 2001 onwards, the largest and second largest national annual cannabis herb seizures worldwide were reported by Mexico and the United States, respectively. In Mexico, following two consecutive year-on-year increases, cannabis herb seizures fell by almost one quarter, amounting to 1,658 mt in 2008, the lowest level since 2002. In the United States, seizures of cannabis herb remained at the high level (1,447 mt) reached in 2007, at 1,472 mt in 2008. The drop in cannabis herb seizures in Mexico was offset by a significant increase in South America, mainly owing to the contribution of the Plurinational State of Bolivia. Seizures, as reported by the Bolivian Government, more than doubled in 2008, and increased by a further 74% in 2009, continuing a rapidly increasing trend which can be traced back to 1999. Over the period 2003-2009 in particular, cannabis herb seizures in the Plurinational State of Bolivia rose steadily, from 8.5 mt in 2003 to 1,937 mt in 2009. This represented a 228-fold increase over a period of six years, equivalent to six consecutive year-on-year increases of 147%. The level in 2008 was the third highest reported by a single country worldwide, and the level in 2009 was

Fig. 164: Breakdown of global cannabis herb seizures (mt), 1999-2008

Source: UNODC ARQ/DELTA

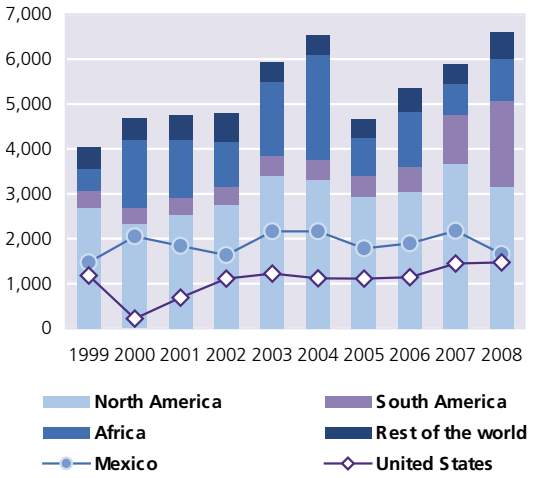
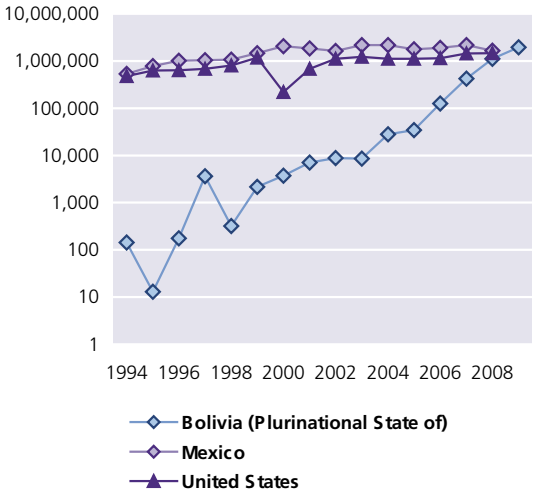


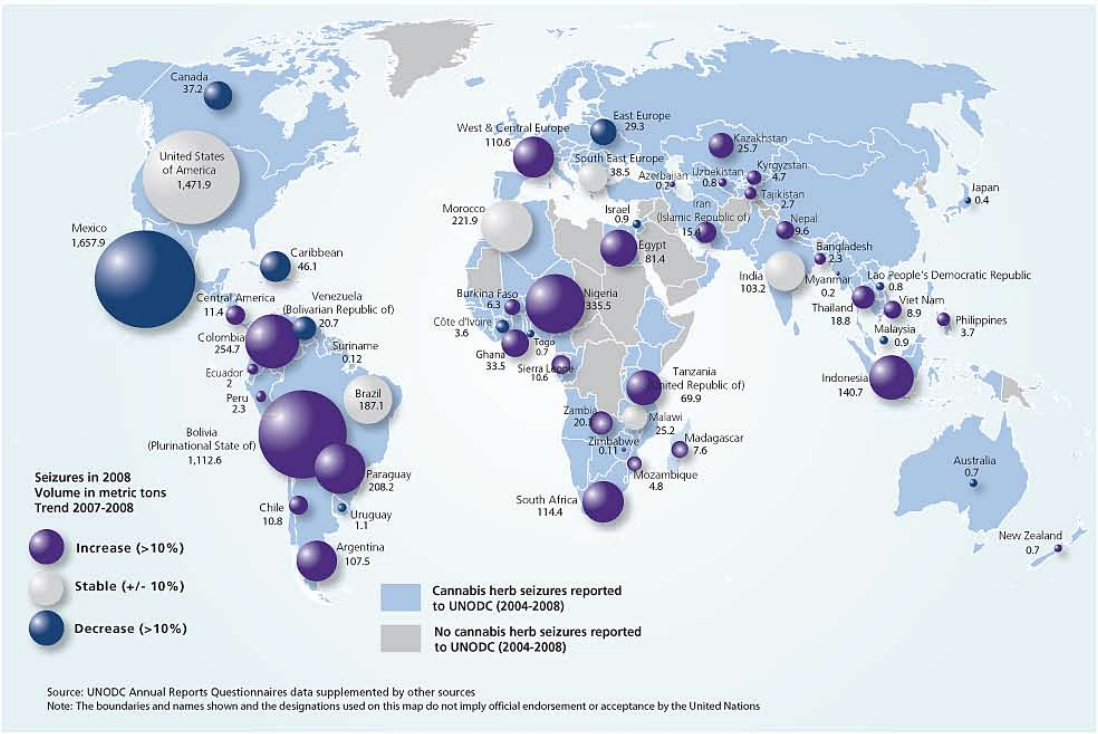
Fig. 165: Cannabis herb seizures in the Plurinational State of Bolivia, Mexico and the United States, 1994-2009 (kg, logarithmic scale)

Sources: UNODC ARQ, Bolivia (Plurinational State of), United States (annual reports), Mexico (Government), UNODC field offices, INTERPOL



8 Frequency measured in terms of number of incidents/seizure cases.

Map 25: Seizures of cannabis herb, 2008 (countries reporting seizures of more than 100 kg)



Source: UNODC Annual Reports Questionnaires data supplemented by other sources
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

in excess of the largest quantities reported worldwide in 2008.

Africa accounted for 14% of global seizures in 2008, with total seizures in this region rising to 936 mt in 2008, up by one third from 2007. In 2008, as in 2007, the largest and second largest seizures in this region in terms of quantity were reported by Nigeria (336 mt) and Morocco (222 mt).

Seizures of cannabis herb also rose markedly in Asia, from 209 mt in 2007 to 340 mt in 2008, owing mainly to extraordinarily large seizures reported by Indonesia (141 mt).

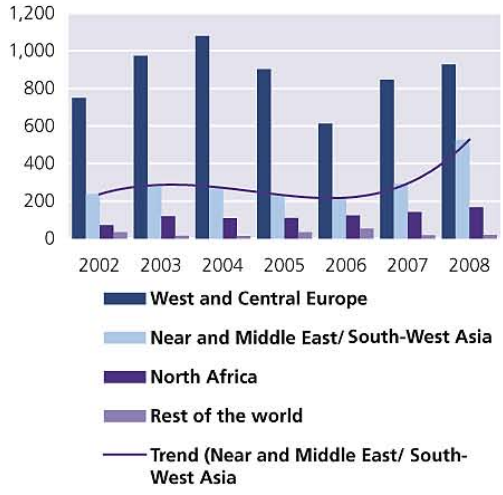
A less pronounced increase was also registered in Europe, where seizures rose from 144 mt in 2007 to 178 mt in 2008. The Netherlands recorded a notable increase, with seizures rising to 42.4 mt in 2008, the highest level since 2002.

Cannabis resin

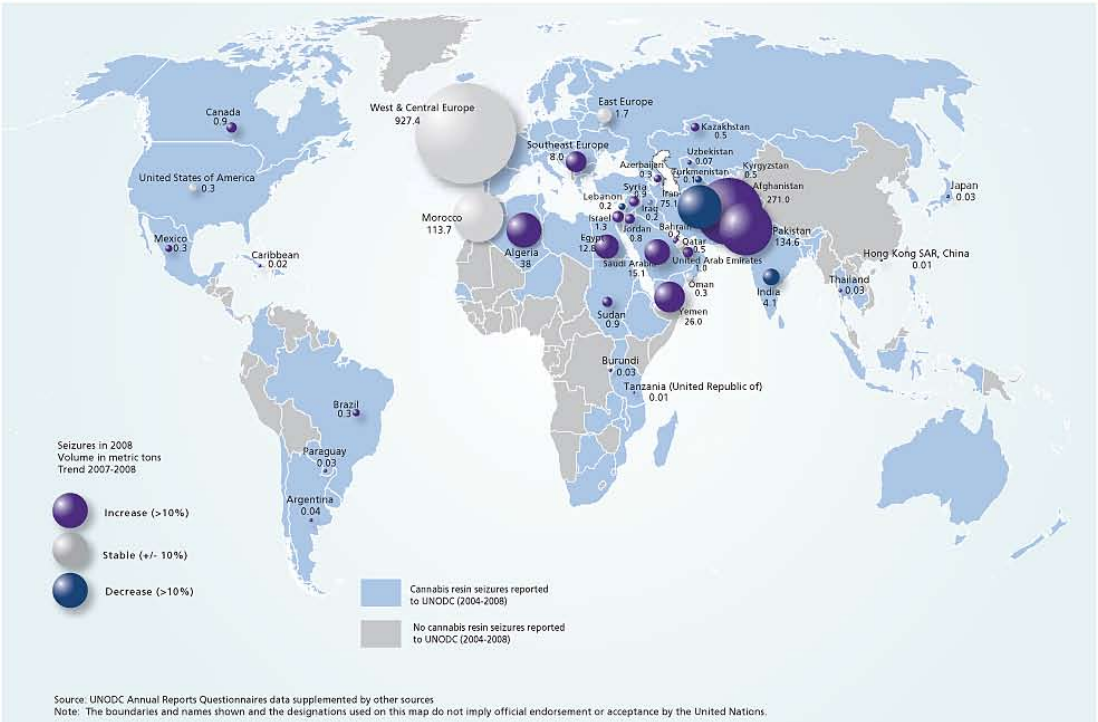
In 2008, global cannabis resin seizures rose by one quarter, to reach a record level of 1,637 mt from the 1,295 mt reported in 2007. Seizures continued to be concentrated in West and Central Europe (notably Spain), the Near and Middle East/South-West Asia (notably Afghanistan, the Islamic Republic of Iran and Pakistan) and North Africa (notably Morocco). A pronounced increase, both in absolute and relative terms, was registered in the Near and Middle East/South-West Asia, mainly due to the contribution of Afghanistan. The share of global seizures attributable to this subregion rose from less than one fifth in 2005 to almost one third in 2008.

Fig. 166: Breakdown of cannabis resin seizures worldwide (mt), 2002-2008

Sources: UNODC ARQ/DELTA



Map 26: Seizures of cannabis resin, 2008 (countries reporting seizures of more than 100 kg)



Source: UNODC Annual Reports Questionnaires data supplemented by other sources
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

From 1996 onwards, the subregion of West and Central Europe consistently accounted for more than half of annual global cannabis resin seizures. Spain consistently reported - every year from 1998 to 2008 - the largest annual cannabis resin seizures worldwide. Seizures in this country reached 654 mt in 2007 and remained essentially stable in 2008, at 683 mt.

In the subregion of the Near and Middle East/South-West Asia, seizures of cannabis resin rose sharply, from 292 mt in 2007 to 527 mt in 2008. The increase was mainly due to seizures in Afghanistan, which rose three-fold, from 84 mt in 2007 to 271 mt in 2008. The marked increase in 2008 was mainly due to a single extraordinarily large seizure of 237 mt of cannabis resin in Kandahar province in June 2008. However, the sharply increasing trend in Afghanistan was already observed in 2007, when seizures were more than double the level in 2006 (37 mt).

Seizures of cannabis resin also rose moderately in North Africa, from 141 mt in 2007 to 165 mt in 2008. The largest seizures in this subregion continued to be reported by Morocco, where seizures amounted to 114 mt in 2008, essentially sustaining the increased level of 2007 (118 mt). In Algeria and Egypt, seizures more than doubled in 2008, reaching a record level of 38 mt in Algeria and 13 mt – the highest since 1989 - in Egypt.

2.4.3 Prices

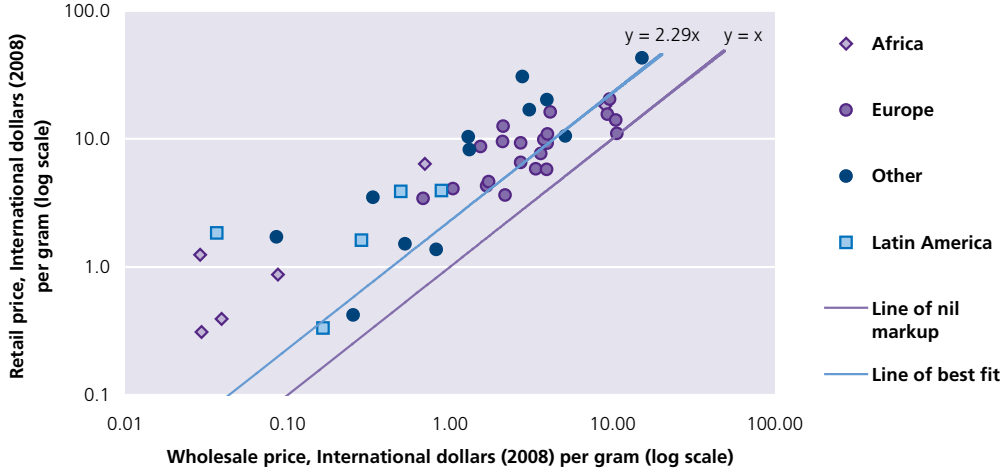
Given the relative ubiquity of cannabis cultivation, local demand for cannabis herb tends to be met by production occurring in proximity to consumption, resulting in trafficking patterns which are generally rather localized. Moreover, cannabis herb undergoes relatively little processing before reaching the consumer. Both of these factors distinguish cannabis herb from other plant-based drugs in terms of the driving forces setting price levels. There are a number of factors that may affect prices of heroin and cocaine: sharp increases or decreases of its cultivation in one or two countries, costs and risks associated with processing the drug and its trafficking to the destination and the country's role and position in the production and transport chain. All these factors play a much lesser role in setting the wholesale and retail price of cannabis herb.

Nevertheless, prices of cannabis herb display a noticeable variability across different countries and regions, even when adjusted for purchasing power parities (international dollars). Some regions revealed intra-regional consistency, although comparisons across countries should be considered with caution since prices may relate to different product types. High retail prices were reported by Japan, Singapore and two territories in Eastern Asia (Hong Kong and Macao, China). The high price in Japan may be due to the fact that, as reported by Japan, in 2007 cannabis herb was mainly imported, originating in Canada (74%), South Africa (15%) and the Netherlands (11%).[9] This is contrary to the prevalent pattern in other countries, where most cannabis herb is locally sourced. Cannabis herb prices in Europe were also relatively high. The lower end of the scale was occupied mainly by countries in Africa, South America and East, South-East and South Asia.

The analysis of the ratio between wholesale and retail prices in selected countries indicates that the markup from wholesale to retail varies across countries and regions. Although the overall estimate indicates a markup

Fig. 167: Typical retail and wholesale cannabis herb prices, adjusted for purchasing power parity, 2008 (log-log scale)

Note: On a linear scale, the slope of the line of best fit (through the origin) is 2.29. This means that, overall, there is a markup of 129% in price from wholesale to retail level. 'International dollars' are used to express PPP-adjusted values. An international dollar represents the purchasing power of one US dollar based on a basket of goods with US prices.
Source: UNODC ARQ (price data), World Bank (purchasing power parities)



9 There are, however, indications of small-scale cultivation of cannabis in Japan.

Fig. 168: High cannabis herb prices, adjusted for purchasing power parities, 2008

Source: UNODC (ARQ price data), World Bank (purchasing power parities)
Note: 'International dollars' are used to express PPP-adjusted values. An international dollar represents the purchasing power of one US dollar based on a basket of goods with US prices.

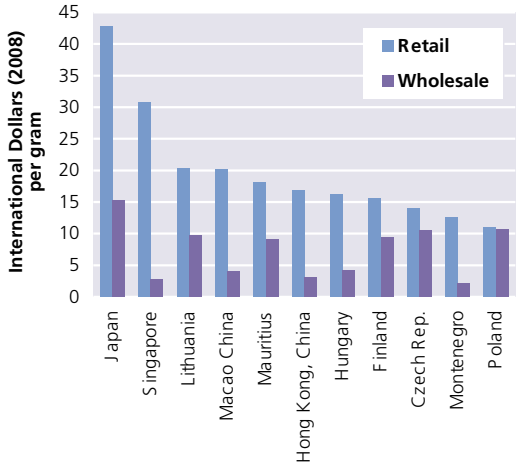
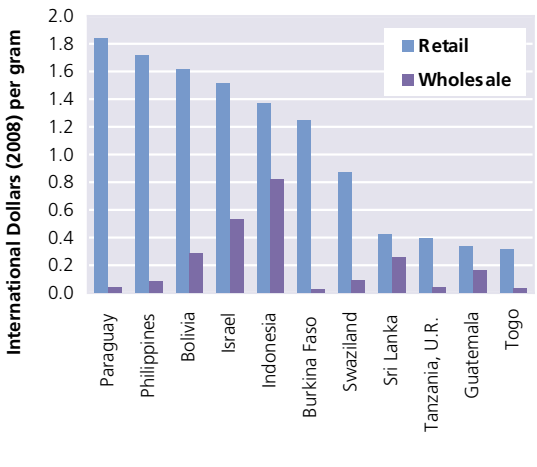


Fig. 169: Low cannabis herb prices, adjusted for purchasing power parities, 2008

Source: UNODC (ARQ price data), World Bank (purchasing power parities)
Note: 'International dollars' are used to express PPP-adjusted values. An international dollar represents the purchasing power of one US dollar based on a basket of goods with US prices.



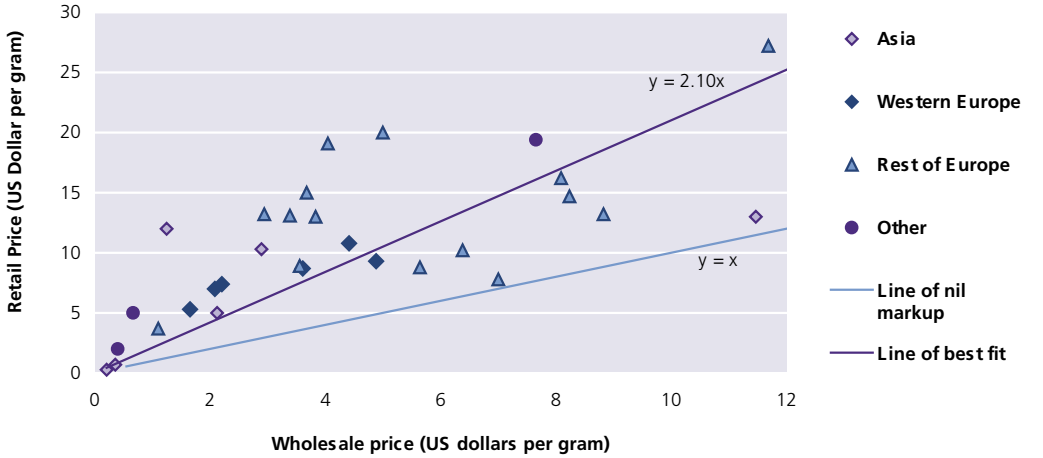
of 129%, the markup tends to be higher in Africa than in Europe. One possible reason for this could be that production of cannabis herb occurs on a larger scale in Africa, resulting in a more pronounced disparity between wholesale and retail prices.

In contrast with cannabis herb, both retail and wholesale prices of cannabis resin are more dispersed when expressed in purchasing power parities.[10] This may suggest that factors other than the purchasing power of local consumers and traffickers are more important in driving prices. Indeed, cannabis resin is produced in a handful of countries and prices are affected by the inter-regional nature of trafficking routes.

Very low cannabis resin prices were reported in 2008 by

Fig. 170: Typical retail and wholesale cannabis resin prices per gram in US dollars, 2008

Note: The slope of the line of best fit (through the origin) is 2.10. This means that, overall, there is a markup of 110% in price from wholesale to retail level.
Source: UNODC ARQ



10 For this reason, the prices in the figure are expressed in US$.

Fig. 171: High cannabis resin prices, 2008

Source: UNODC ARQ/DELTA

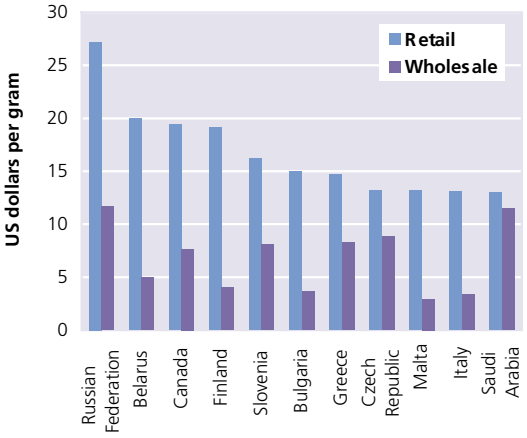
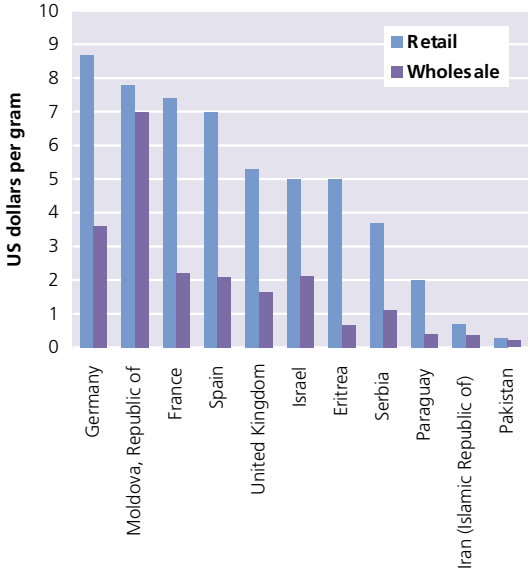


Fig. 172: Low cannabis resin prices, 2008

Source: UNODC ARQ/DELTA



Pakistan and the Islamic Republic of Iran, reflecting their proximity to the major producing country Afghanistan, as well as Paraguay, another country with significant production of cannabis. Countries in West Europe also reported relatively low prices, notably Spain, the main point of entry for cannabis resin into continental Europe from Morocco. High cannabis resin prices were reported by the Russian Federation and neighbouring Belarus.

2.4.4 Consumption

Cannabis remains the most widely used illicit substance in the world. Globally, the number of people who had used cannabis at least once in 2008 is estimated between 129 and 191 million, or 2.9% to 4.3% of the world population aged 15 to 64. Compared to last year, the lower bound of the estimate decreased and the range widened due to the increased uncertainty of having dropped some countries' estimates which were more than ten years old. National experts in many parts of the world perceive cannabis use to be either stabilizing or increasing, although about 15 countries reported a decrease in 2007 and 2008. In Africa, where quantitative information on illicit drugs use is scarce, the majority of national experts perceive an increase in the use of cannabis.

In North America, cannabis use has been declining or stabilizing over the past years

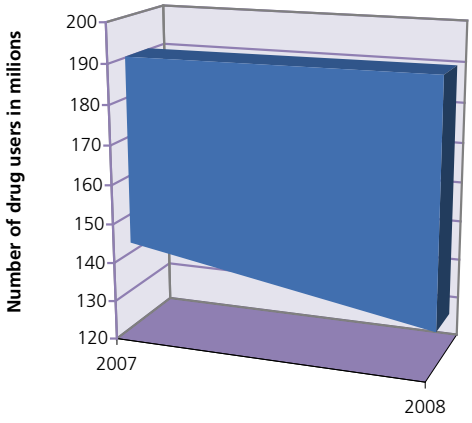
In North America, there are an estimated 29.5 million people who had used cannabis at least once in 2008, a decrease from the 31.2 million estimated in 2007. This decrease reflects the availability of new data for Canada, which in 2008 showed a considerably lower number of cannabis users compared to their previous 2004 survey estimates. Cannabis use in the United States and Canada has been declining or stabilizing over the past years, although a slight increase was observed in the United States in 2008 (from 12.3% of the population aged 15-64 in 2007 to 12.5% in 2008). In the United States, between 2002-2007, there was a significant decrease in

Table 25: Estimated number of people who used cannabis at least once in the past year and prevalence among population aged 15-64, by region, 2008

Region/subregion	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population aged 15-64 (lower)	-	Percent of population aged 15-64 (upper)
Africa	27,680,000	-	52,790,000	5.0	-	9.6
Eastern Africa	4,500,000	-	9,190,000	3.4	-	7.0
North Africa	4,680,000	-	10,390,000	3.6	-	8.0
Southern Africa	4,450,000	-	11,170,000	4.0	-	10.1
West and Central Africa	14,050,000	-	22,040,000	7.8	-	12.3
Americas	38,210,000	-	40,030,000	6.3	-	6.6
Caribbean	430,000	-	1,960,000	1.6	-	7.4
Central America	540,000	-	600,000	2.2	-	2.5
North America	29,950,000	-	29,950,000	9.9	-	9.9
South America	7,300,000	-	7,530,000	2.9	-	3.0
Asia	31,510,000	-	64,580,000	1.2	-	2.4
Central Asia	1,860,000	-	2,140,000	3.7	-	4.3
East/South-East Asia	5,370,000	-	23,940,000	0.4	-	1.6
Near and Middle East	7,790,000	-	10,950,000	3.1	-	4.4
South Asia	16,490,000	-	27,550,000	1.9	-	3.1
Europe	29,370,000	-	29,990,000	5.3	-	5.4
East/South-East Europe	8,520,000	-	9,010,000	3.0	-	3.2
Western/Central Europe	20,850,000	-	20,990,000	7.7	-	7.8
Oceania	2,140,000	-	3,410,000	9.3	-	14.8
Global	**128,910,000**	**-**	**190,750,000**	**2.9**	**-**	**4.3**

Fig. 173: World annual cannabis users

Source: UNODC ARQ/DELTA



the annual prevalence of cannabis use within the population aged 12 and older, from 11% to 10.1%. In 2008, the annual prevalence of cannabis use increased for the first time after 2002, reaching the level observed in 2006 (10.3% of the population aged 12 and older).[11] A similar trend has been observed among secondary school students.

Fig. 175: Cannabis: lower and upper range of numbers and annual prevalence, globally and by region

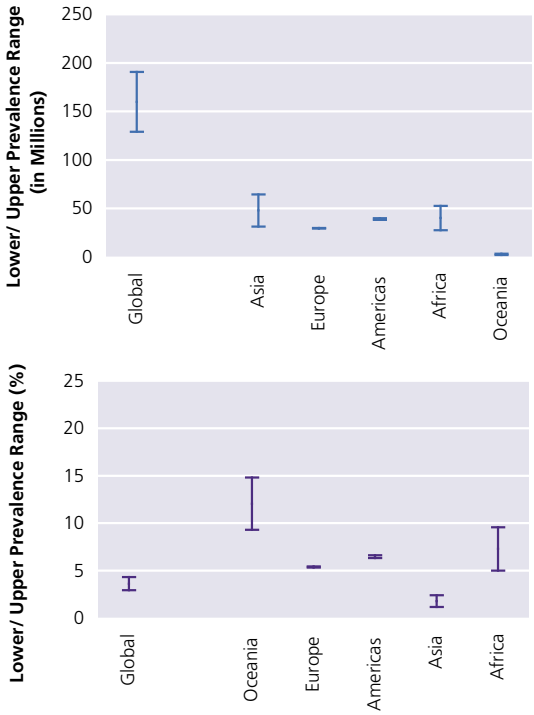
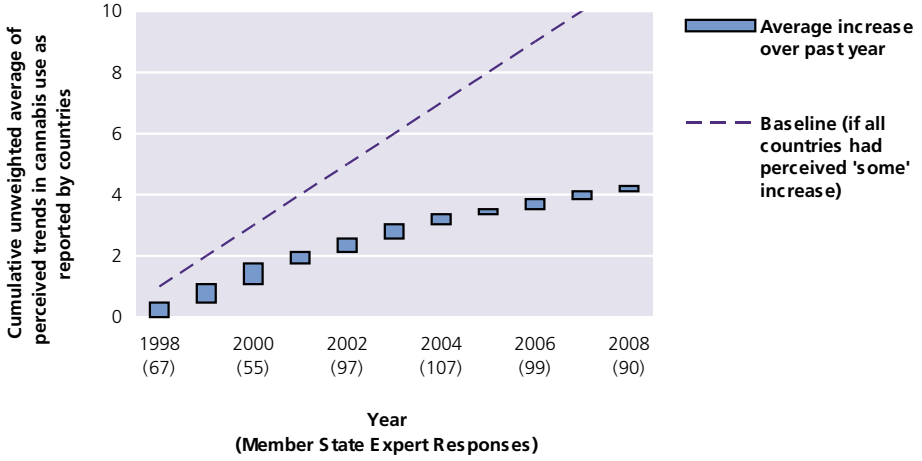


Fig. 174: Global trend in the perception of cannabis use: unweighted average of trends as reported by national experts*

* The graph measures the trend from countries reporting an increase or decrease in drug use (it does not measure the trend in number of drug users).

Source: UNODC ARQ



11 Substance Abuse and Mental Health Services Administration *Results from the 2008 National Survey on Drug Use and Health, National Findings*, Office of Applied Studies (OAS), SAMHSA, US Department of Health and Human Services, September 2009.

Fig. 176: Annual prevalence of cannabis use among US high school students, 2000-2009

Source: Data from the *Monitoring the Future* study, 2009, National Institute of Drug Abuse, USA

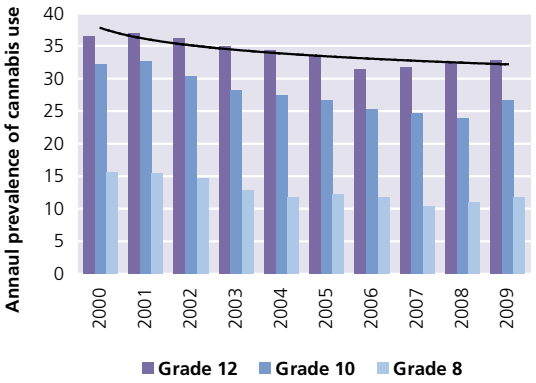
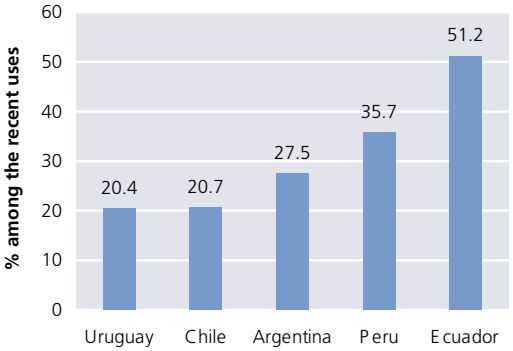


Fig. 177: Proportion of recent cannabis users diagnosed as 'dependent' in some Latin American countries

Source: UNODC and CICAD, *First comparative Study on Drug Use and Associated Factors in the General Population aged 15-64*



Despite the large decline from 2002, cannabis remains the most commonly used illicit drug among US drug users. In 2008, cannabis was used by 75.7% of current illicit drug users and was the only drug used by 57.3% of them.[12]

The annual prevalence among the population aged 15 and older in Canada has also decreased significantly, from 14.1% in 2004 to 11.4% in 2008.[13] In 2008, the 32.7% prevalence of cannabis use among youth aged 15 to 24 was more than four times higher than the prevalence of 7.3% for adults 25 and older. Compared with the national average of 11.4%, the prevalence of past-year use of cannabis was fairly consistent across the provinces in Canada.[14]

In 2008, Mexico conducted a national representative household survey for urban and rural populations aged 12 to 65. Compared with results of the last survey in 2002, the annual prevalence of cannabis use among the general population had increased from 0.6% to 1%.[15] Despite the recent increase, and Mexico's role as an important cannabis supplier to the US market, household survey results continue to show considerably lower prevalence rate for Mexico than for Canada or the United States.

Increase in cannabis use has been reported in South America

In contrast to North America, a perceived increase in cannabis use has been reported from almost all national experts in South America, although the annual prevalence of cannabis use in South America remains considerably lower than in North America. Around 3%, or an estimated 7.3 -7.5 million people among the population aged 15 to 64, had used cannabis at least once in the past year in 2008, which is a decrease from the 8.5 million estimated for 2007. This drop does not reflect a real change in cannabis use in the region between 2007 and 2008, but rather a revision of 2005 data reported for the Bolivarian Republic of Venezuela, where the prevalence estimates were revised from 7.5% to 0.9 %. The highest prevalence of cannabis use is found in Argentina (7.2%), Chile (6.7%) and Uruguay (6%). However, compared to the general population, the highest cannabis use prevalence among school students was reported among those in Chile (15.6%), Uruguay (14.8%) and Colombia (8.4 %).[16]

The comparative study on drug use and associated factors conducted by CICAD and UNODC in six Latin American countries showed that among the recent cannabis users (used in the past year) who were interviewed in the study, between 20.4% of cannabis users in Argentina to almost half of the recent users in Ecuador were diagnosed as dependent users,[17] based on the clinical criteria of International Classification of Diseases (WHO – ICD revision 10).[18]

12 Ibid.

13 Health Canada, Canadian Centre on Substance Abuse, *Canadian Alcohol and Drug Use Monitoring Survey, summary of results for 2008.*

14 Ibid.

15 Mexico, Secretaria de Salud Mexico, Instituto Nacional de Salud Publica, *Encuesta Nacional de Adicciones 2008*, Cuernavaca, Morelos 2009.

16 UNODC and CICAD, *Informe Subregional sobre Uso de Drogas en Poblacion Escolarizada*, 2009/2010.

17 UNODC and CICAD, *First comparative Study on Drug Use and Associated Factors in the General Population aged 15-64*, April 2008.

18 See: www.who.int/classifications/icd/en.

Fig. 178: Annual prevalence of cannabis use among secondary school students* in selected South American countries

Source: UNODC data based on UNODC – *CICAD, Informe Subregional sobre Uso de Drogas en Pobacion Escolarizada*, 2009/2010 and ARQ
* The age groups are different for the countries. For Argentina and Uruguay, 13-17; Chile 13-18; Brazil, Colombia and Paraguay, 15-16; Peru 11-17 and Ecuador 12-17 year old students.

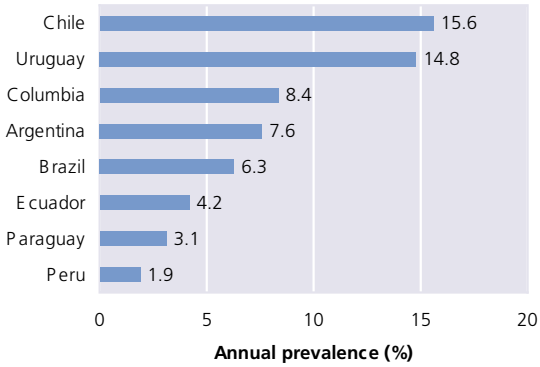
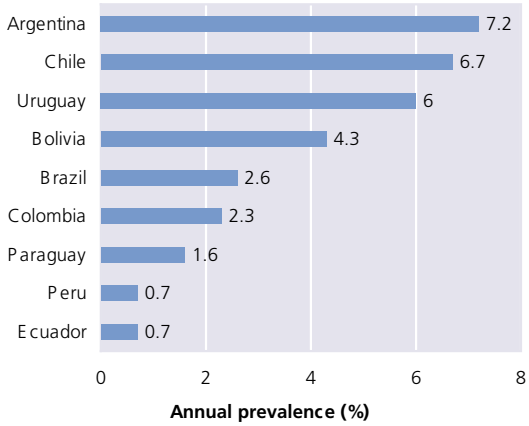


Fig. 179: Annual prevalence of cannabis use among the population aged 15-64 in selected South American countries

Source: UNODC data based on UNODC estimates for 2007, UNODC and CICAD, *First comparative Study on Drug Use and Associated Factors in the General Population aged 15-64* and ARQ



Most of the countries in the Caribbean also have higher than world average prevalence of cannabis use, with rates such as 11.7% in Saint Kitts and Nevis and 10.8% in Dominica and Grenada. Haiti (1.4%) and the Dominican Republic (0.3%) are the two countries with low prevalence of cannabis use. Trends in cannabis use in the Caribbean are mixed. An increasing trend in prevalence of cannabis use among the general population is registered in the Bahamas (from 4.7% in 2003 to 5.5% in 2008), Grenada (from 6.7% in 2003 to 10.8% in 2005), Saint Vincent and the Grenadines (from 6.2% in 2002 to 7.1% in 2006), Trinidad and Tobago (from 3.7% in 2002 to 4.7% in 2006). A decreasing trend, in contrast, was observed in the Dominican Republic (from

Fig. 180: Trends in the annual prevalence of cannabis use in the general population in Caribbean countries which reported new data in 2008

Source: UNODC

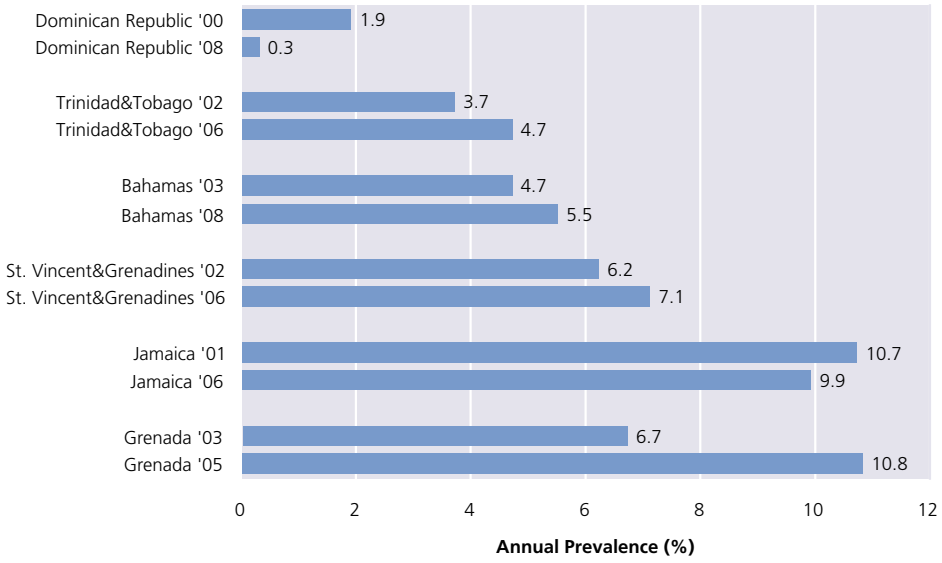


Fig. 181: Annual cannabis users in Africa

Source: UNODC ARQ

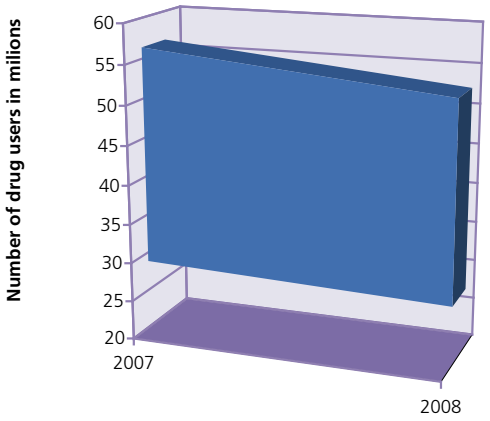
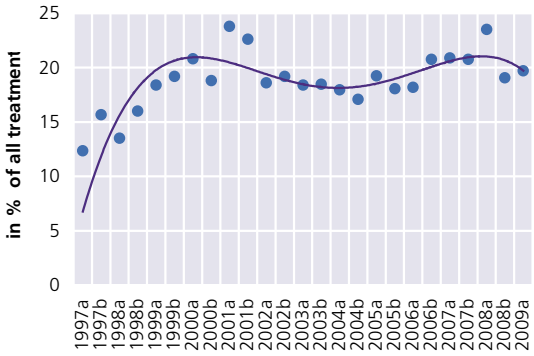


Fig. 182: South Africa: cannabis as primary drug of abuse in treatment demand, 1997-2009

Source: Source: Pluddemann A., Parry C., Bhana A., et al, *Alcohol and Drug Abuse Trends, January – June 2009,* Phase 26 (SACENDU reports data biannually)



1.9% in 2000 to 0.3% in 2008) and in Jamaica (from 10.7% in 2001 to 9.9% in 2006). The 2005 estimates for Haiti were revised from 6.2% to 1.4% based on a school survey undertaken by CICAD.

Africa continues to lack quantitative information, but cannabis use is perceived to be increasing in most parts of the continent

Except for South Africa, there is no quantitative information available for Africa for 2008. The estimates provided for the continent are based on older data reported by UNODC in previous *World Drug Reports*. Compared to last year, the estimate for Ghana (annual prevalence 21.5%) was dropped because it was more than ten years old. Based on the available information, an estimated 27.7 to 52.8 million people, or 5.0% to 9.6% of the population aged 15 to 64, used cannabis in Africa in 2008. This wide range in the estimated number is mainly due to missing information and data from most of the African countries.

In 2008, experts from 73% of the responding states in Africa reported increases in cannabis use compared with the previous year, with decreases noted only in North Africa. Zambia (17.7%) and Nigeria (13.8%) remain the countries with high prevalence of cannabis use. The only systematic monitoring of drug use in Africa is in South Africa where it is based on treatment demand. Based on annual data from the different regions in South Africa, between 26% and 58% of patients attending specialist treatment centres had reported cannabis as their primary or secondary drug of abuse.[19]

19 Pluddemann A., Parry C., Bhana A., and others, *Alcohol and Drug Abuse Trends: January – June 2009 (Phase 26)*, South African Community Epidemiology Network on Drug Use (SACENDU), November 2009.

In Europe, cannabis use has been stabilizing in the past few years, but it is still increasing in some countries

In Europe, an estimated 29.5 million people, or around 5.4% of the general population aged 15 to 64, used cannabis in the previous year. Cannabis use is largely concentrated among young people (15 – 34 years old). Within Europe, cannabis use differs considerably among the general population, with higher prevalence (7.7%) reported in West and Central Europe, compared to East and South-East Europe (3%). The Czech Republic (15.2% - 2008), Italy (14.6% - 2008) and Spain (10.1% - 2007) are the three countries with the highest cannabis use prevalence rates, accounting for about one third of all cannabis users in Europe (5 million only in Italy). The use of cannabis in Europe has evolved considerably over the last decade. In most countries, cannabis use increased during the 1990s and early 2000s, and this may now be moving into a new phase in some countries where data from the general population and school surveys point to a stabilizing or even decreasing trend. Countries that started to indicate a decrease in prevalence over the previous years include Spain, France, Germany, Austria, Hungary and Sweden. England and Wales (the third largest European market of cannabis users after Italy and the Russian Federation) had shown a strong decline between 2003 and 2008 (from 10.8% to 7.4% of the general population), however, in 2009, the prevalence increased to 7.9%. New data for Scotland, Finland, Romania and Bosnia and Herzegovina show a decrease. However, the majority of countries with new data in 2008 reported an increase in cannabis use from previous estimates. These are Bulgaria, the Czech Republic, Denmark, Estonia and Lithuania.

The last few years have also seen a growing understand-

Fig. 183: Europe: Annual prevalence of cannabis use among general population in countries reporting an increase in 2008

Source: UNODC

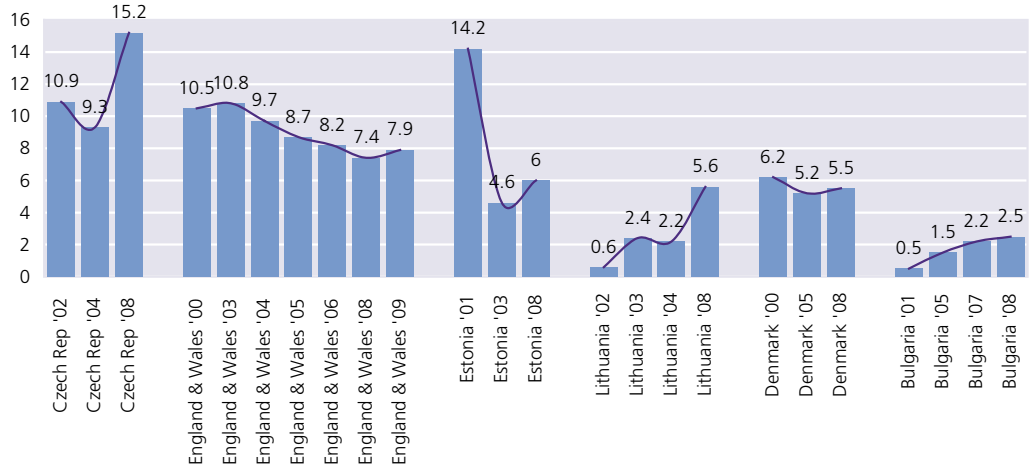
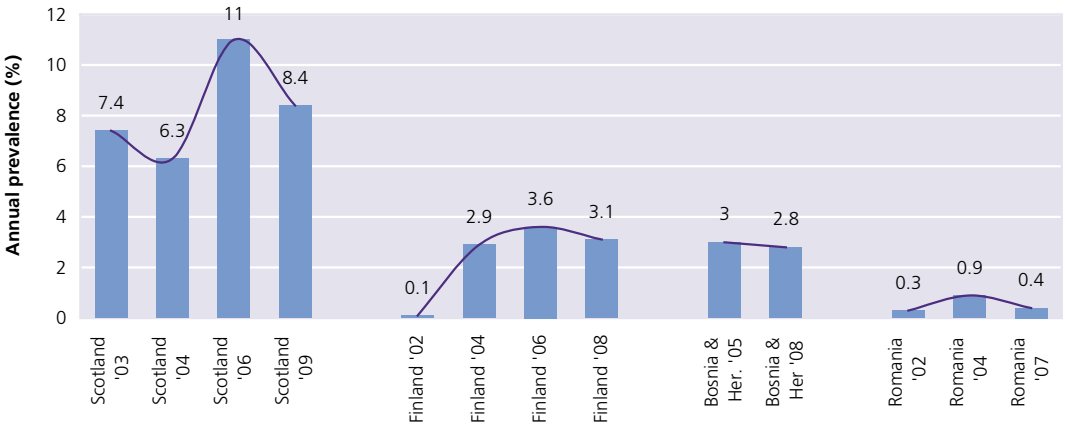


Fig. 184: Europe: Annual prevalence of cannabis use among general population in countries reporting a decrease in 2008

Source: UNODC



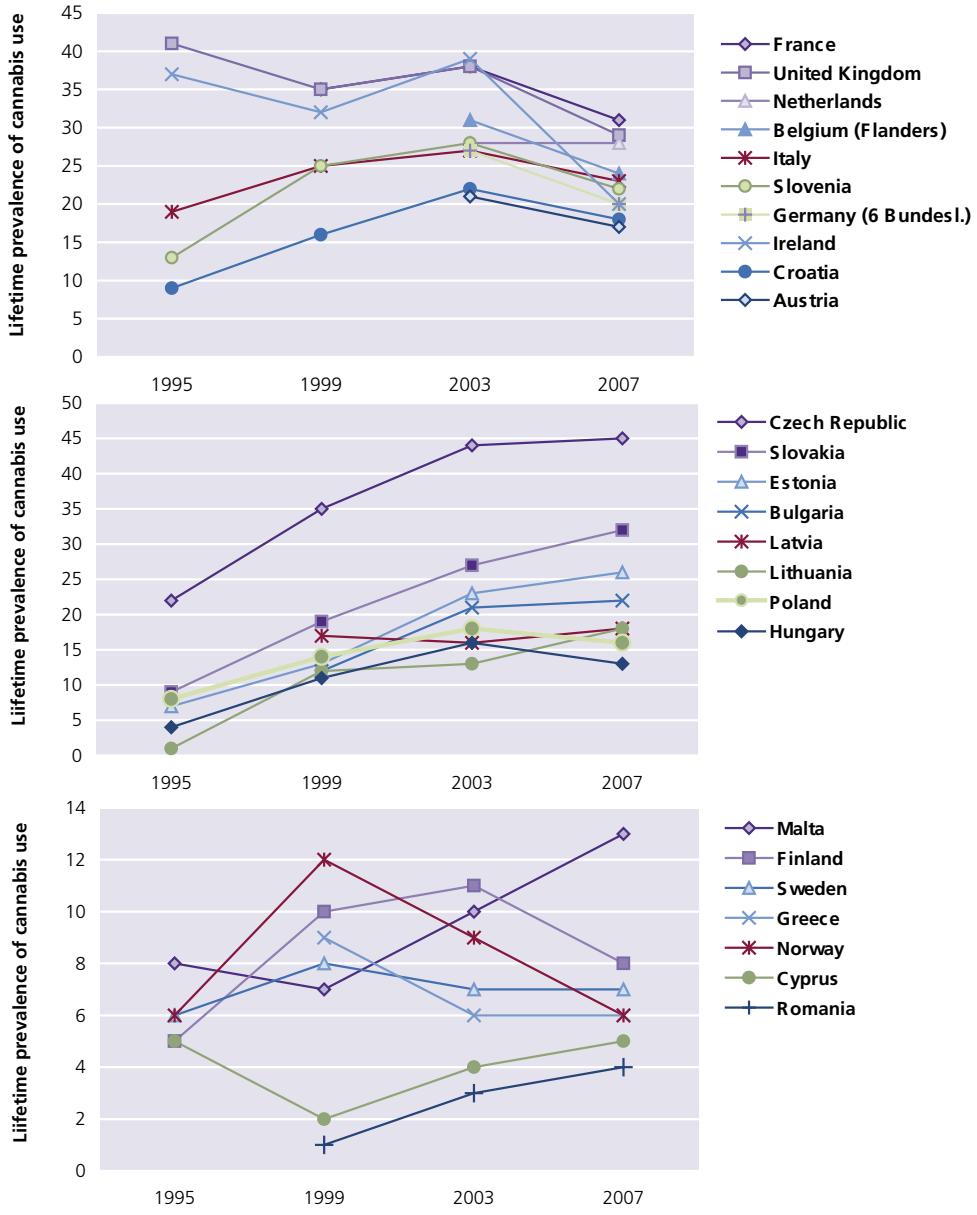
ing of the public health implications of long-term, widespread use of cannabis and rising reported levels of treatment demand for cannabis-related problems in Europe.

Increases in cannabis use among school students occurred in a number of European countries between 1995 and 2003, but in most countries, it stabilized or decreased in 2007, although different patterns can be found across Europe. Seven countries, mainly in northern and southern Europe (Greece, Cyprus, Malta, Romania, Finland, Sweden and Norway), have reported overall stable and low lifetime prevalence of cannabis use between 2003 and 2007. Most West European countries, as well as Croatia and Slovenia, which had high or strongly increasing lifetime cannabis prevalence until 2003, saw a decrease or stabilization in 2007 – most noticeable among these countries is Ireland. In most parts of Central and East Europe, the increasing trend observed between 1995 and 2003 appears to be levelling out.[20]

20 EMCDDA, *Statistical Bulletin 2009* and Hibell, et al, *ESPAD Surveys 1995, 1999, 2003 and 2007.*

Fig. 185: Varying trends of cannabis use among 15-16 year old students in Europe, 1995-2007

Source: ESPAD



Cannabis use in Oceania is also declining

In the Oceania region, between 2.1 and 3.4 million people are estimated to have used cannabis in the past year (9.3% – 14.8% of the general population aged 15 – 64). Except for Australia, Fiji and New Zealand, there are no recent or reliable estimates available of cannabis use in the remaining parts of the region. However, information from school surveys done in the US Pacific Island territories indicate considerable cannabis use among the youth where the lifetime prevalence ranges from 54.9% in the Commonwealth of Northern Mariana Islands, Guam 45.5%, American Samoa 17.6 and the Marshall Islands 13.9%.[21]

21 Centers for Disease Control and Prevention (CDC), *Youth Risk Behavior Surveillance – Selected Steps Communities,* United States, 2007.

The 2008 range became larger, due to a higher prevalence in New Zealand and new data for some territories in the Pacific.

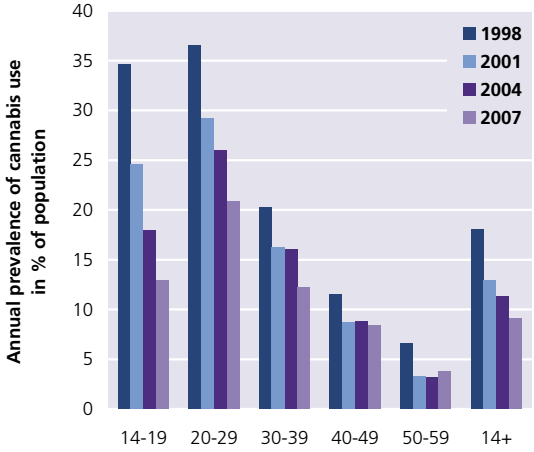
In Australia, the annual prevalence of cannabis use has been declining since 1998, with an almost one fifth decline between 2004 and 2007. The major decline in cannabis use has been observed in the younger population (aged 14 to 19) from a prevalence of 34.6% in 1998 to 12.9% in 2007. In New Zealand, the annual prevalence of cannabis use fell from 20.4% in 2003 to 13.3% in 2006, to increase again in 2008 to 14.6%. The cannabis use prevalence was highest for men in the 18 – 24 age group and for women in the 16-17 and 18-24 year age groups.[22]

Limited or no recent data on cannabis use trends are available from Asia, but experts perceive an increase.

In Asia, it is estimated that between 31.5 million and 64.6 million people had used cannabis in the past year. Higher annual prevalence rates of cannabis use is reported from Central Asia (3.7% to 4.3% of the general population) and the Near and Middle East (3.1% to 4.3% of the general population). The most populated countries in Asia, China and India, do not have estimates of cannabis users among the general population. A survey carried out in India in 2001 estimated a monthly prevalence rate of cannabis use at 3% of the male population aged 12-60. The lack of information on cannabis use among the female population prevents the development of an accurate estimate of the prevalence rate among the Indian population. The national drug authorities reporting to UNODC indicate a rise in cannabis use in the region over the past year. Since for many parts of the region there are no recent or reliable estimates available, the perceived trends by experts need to be treated with caution. In 2008, experts from 15 countries in Asia reported an increase in cannabis use compared to 13 in 2007 and nine in 2005. Experts from seven countries reported a stable trend and eight countries in Asia reported declines in cannabis use in 2008.

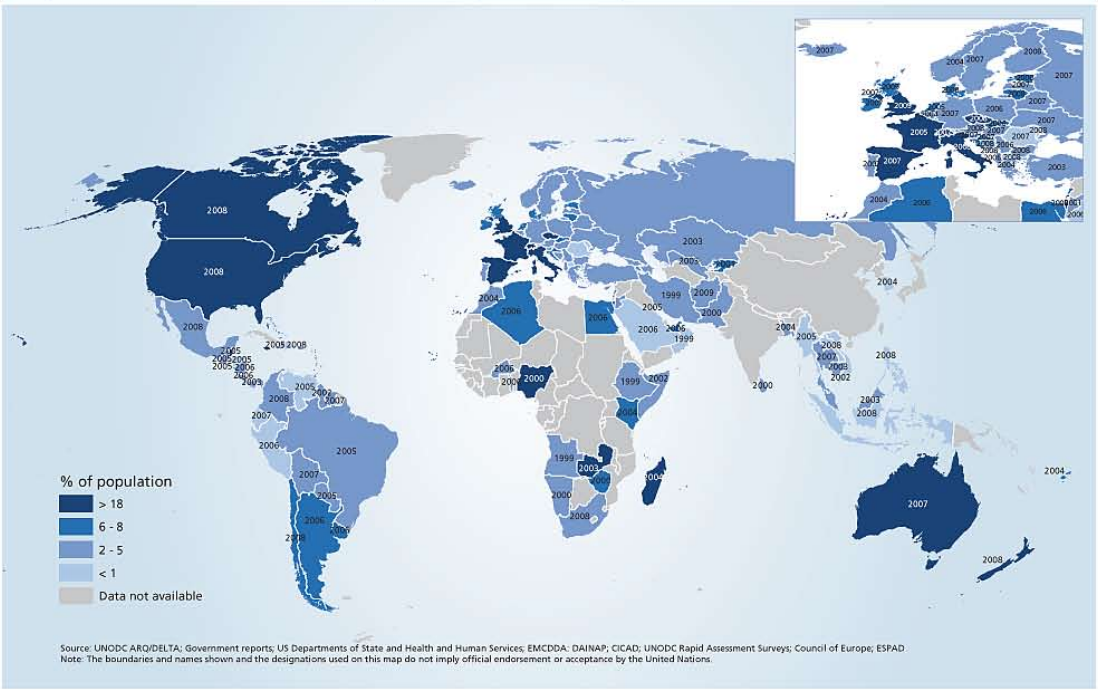
Fig. 186: Australia: annual prevalence of cannabis use among the population aged 14 and above, 1998-2007

Source: *National Drug Strategy Household Survey*, Australia, 2007



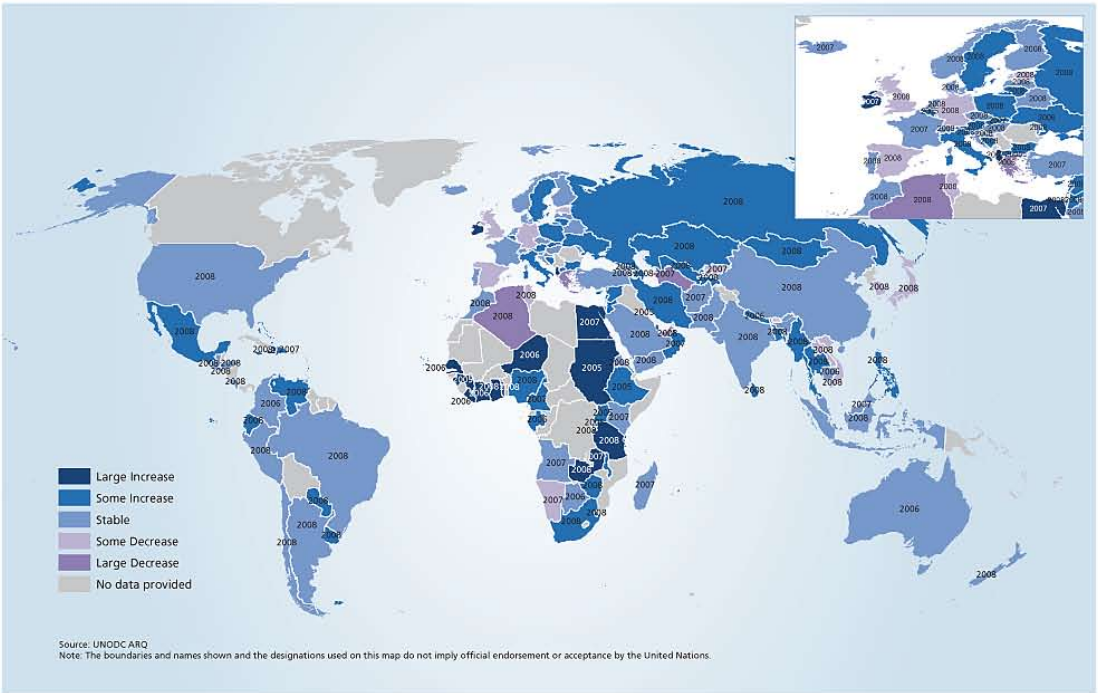
22 Ministry of Health, *Drug Use in New Zealand: Key results of the 2007/08, New Zealand Alcohol and Drug Use Survey*, 2010.

Map 27: Use of cannabis in 2008 (or latest year available)



Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA; DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 28: Expert perception of trend changes in the use of cannabis, 2008 (or latest year available back to 2005)



Source: UNODC ARQ
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

2.5 Amphetamine-type stimulants

2.5.1 Manufacture

Synthetic drug manufacture dominated by ATS, methamphetamine

The majority (99%) of the detected clandestine synthetic drugs laboratories process amphetamine-type stimulants, manufacturing primarily the amphetamine-group substances methamphetamine, amphetamine, methcathinone and ecstasy-group substances. The variety and easy accessibility of the starting materials needed to manufacture synthetic drugs allow production to occur virtually anywhere in the world. It is at the moment impossible to know precisely how much ATS is illicitly manufactured, as independent calculations based on remote sensing of manufacture cannot be done, as is the case with poppy plants and coca bushes.

ATS-related manufacture occurs in all parts of the world; highest concentrations in East and South-East Asia, Europe, North America, Oceania and Southern Africa

The number of reported ATS-related clandestine laboratories increased by 20% in 2008, and for the first time revealed the existence of manufacturing laboratories in Argentina, Brazil, Guatemala, the Islamic Republic of Iran, Kazakhstan and Sri Lanka. Information on the 8,408 detected laboratories came from 32 countries, with the largest numbers reported from the United States of America, the Czech Republic, Australia, China,[1] Slovakia, New Zealand, the Netherlands, Canada and Mexico. However, the number of laboratories is not representative of their output, as many countries with lower total counts report only laboratories with large-scale outputs.[2]

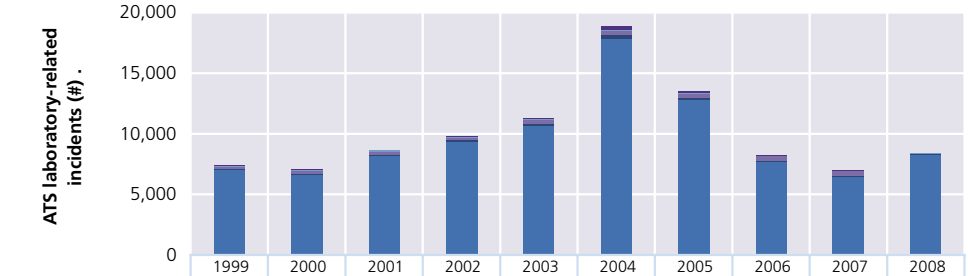
The type and form of ATS manufactured vary across regions. For example, in East and South-East Asia, manufacture of methamphetamine is primarily in tablet form ('yaba') and high purity crystalline form ('ice'), although there are increasing incidents of ecstasy (MDMA) manufacture. Tablets sold as *Captagon* in the Near and Middle East often contain amphetamine and are sourced from South-East Europe and from within the region. In Europe, ATS manufacture is mainly powder and tableted amphetamine and ecstasy (MDMA), with methamphetamine ('pervitine') manufactured primarily in the Czech Republic and Slovakia, and other east European countries, with evidence that manufacture is further spreading. South Africa-based manufacture is predominately methamphetamine ('tik') and methcathinone. Methamphetamine and ecstasy are manufactured in all countries of North America, and there are increasing incidents of methamphetamine-related manufacture occurring throughout Central and South America. Methamphetamine and some ecstasy laboratories are commonly encountered in Oceania – primarily Australia and New Zealand.

1 In 2008, China reported 244 unspecified clandestine laboratories. However, this figure is also known to included some opium dens and was therefore not included in the ATS totals.

2 There is no internationally accepted definition of what constitutes a clandestine synthetic drug laboratory. Therefore, figures may include accounts of ATS precursor extraction, drug synthesis, refinement, tableting and packaging, laboratory storage facilities, and chemical and equipment dumpsites as broadly defined 'laboratories.'

Fig. 187: ATS laboratories (all sizes) reported to UNODC, by type, 1999-2008

Source: UNODC ARQ



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
ATS lab total	7412	7028	8598	9782	11258	18874	13467	8271	7002	8408
Other Synthetic Stimulant	68	19	5	24	70	282	92	51	35	1
Ecstasy Group	62	64	70	59	49	87	63	56	72	53
Combined ATS	204	221	272	244	314	330	370	361	344	15
Amphetamine	59	115	85	132	161	322	159	154	102	44
Methamphetamine	7019	6609	8166	9323	10664	17853	12783	7649	6449	8295

Rebound in US methamphetamine laboratory incidents drives global increase

Global methamphetamine laboratory counts increased 29% in 2008 to 8,295, although the numbers are still significantly lower than their peak in 2004 (17,853). The largest numbers reflected increases reported from the United States (7,226), however, along with 3,866 synthesis laboratories, these figures also include incidents of laboratory storage facilities and chemical/equipment dumpsites. Globally, most of the seized laboratories were methamphetamine-related, due to the simplicity of its manufacture and availability of inexpensive precursor chemicals.

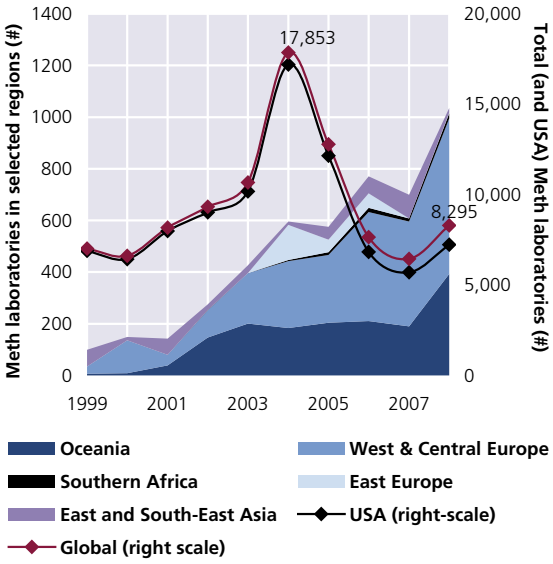
Over the last decade, reports of clandestine laboratory incidents have increased in several regions outside of North America, with large growth in East and South-East Asia, Europe and Oceania. Several countries report few but mostly industrial-sized operations, particularly in East Asia and parts of North America, existing for criminal profit.

Reported amphetamine laboratories in 2008 at the lowest level in a decade

In 2008, only 45 amphetamine laboratories were reported, the lowest in a decade.[3] Most were reported throughout Europe, particularly in West and Central Europe. The decline in the number of laboratories comes at a time when seizures of amphetamine are at record highs, particularly throughout the Near and Middle East, where not a single laboratory was reported in 2008. Indeed, part of the decline in numbers is due simply to less reporting, such as no reports of amphetamine laboratories being provided from the United States in 2008. In general, there are far fewer amphetamine and 'ecstasy'-group laboratories reported because these substances require far greater sophistication than methamphetamine manufacture.

Fig. 188: Number of reported methamphetamine laboratory incidents (all sizes), by notable region, 1999-2008

Source: UNODC ARQ/DELTA



3 These represent amphetamine-only laboratories and do not include combination ATS laboratories.

Fig. 189: Number of reported amphetamine laboratory incidents (all sizes), by notable region, 1999-2008

Source: UNODC ARQ/DELTA

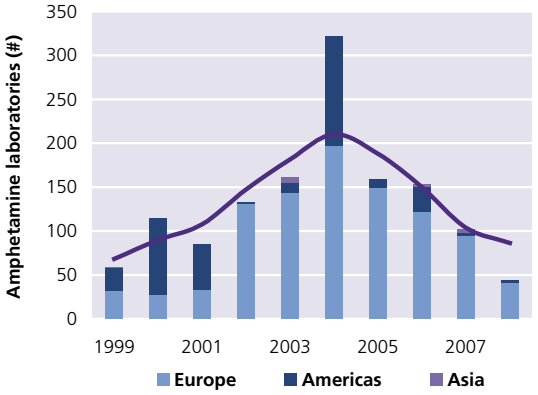


Fig. 190: Regional ecstasy-group laboratories reported to UNODC, 1999-2008

Source: UNODC ARQ/DELTA

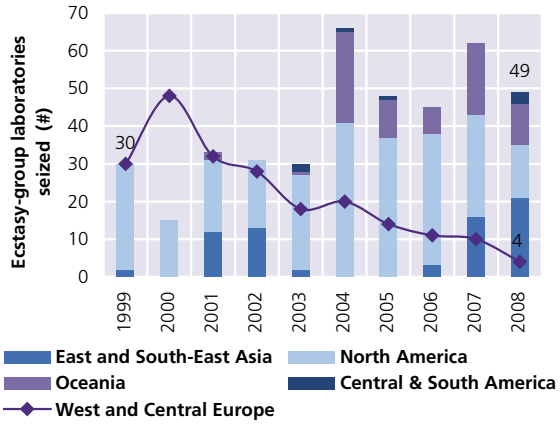


Table 26: Other synthetic drug manufacture incidents, 1999-2008

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
ATS precursors	0	5	0	0	2	0	0	22	1	3
Fentanyl	0	0	0	0	0	0	0	1	1	1
Gamma-hydroxybutyric acid (GHB)	0	1	0	9	21	17	8	10	8	12
Ketamine	0	0	0	0	0	0	0	0	44	0
Lysergic acid diethylamide (LSD)	1	1	1	0	1	0	1	1	1	0
Methaqualone	0	4	5	6	15	16	5	3	4	1
Phencyclidine (PCP)	1	1	4	6	16	0	11	4	0	16
Total	**2**	**12**	**10**	**21**	**55**	**33**	**25**	**41**	**59**	**33**

The number of ecstasy-group laboratories declined in 2008, with few reported in Europe

There were 53 ecstasy-group laboratories reported in 2008, a decline from 2007 (72). Because most MDMA operations are medium- to large-scale, the low numbers are not necessarily a sign of low production. Ten countries reported manufacture, with the highest number of dismantled laboratories (14) in Canada in 2008. There were only four laboratories reported from Europe - in Belgium, the Netherlands and Spain - a significant decline from past years. The manufacture of ecstasy-group substances, previously the dominion of West and Central Europe, is now reported in other parts of the world such as East and South-East Asia, North America, Oceania and Latin America.

Illicit synthetic drug manufacture or processing for substances other than ATS (such as precursor chemicals (ephedrine, pseudoephedrine), fentanyl, gamma-hydroxybutyric acid (GHB), ketamine, lysergic acid diethylamide (LSD), methaqualone and phencyclidine (PCP)) is significantly less common.[4] The most commonly manufactured substance is GHB, averaging 15 cases per year. Since 1999, it has been reported in 11 countries in every region of the world, except for Latin America. Illicit manufacture of ketamine has been reported in China.[5] Methaqualone laboratories are commonly seized in South Africa (known locally as 'mandrax'), but have also been reported in China, India and Kenya.[6] Since 1999, the dismantling of illicit PCP laboratories has only been reported in the United States.

4 Neither GHB or ketamine are under international control, although they are under control in many countries. As such, their figures may be significantly under-reported.

5 China reported seizing significant ketamine laboratories again in 2008, however, specific figures were not provided.

6 Reports of methaqualone manufacture were not provided by South Africa in 2008.

Precursor chemicals for ATS manufacture

Chemical precursors are necessary for the synthesis of amphetamine-type stimulants (ATS), and most of the chemicals commonly used fall under international control. Their seizures are typically reported to the International Narcotics Control Board (INCB) and can provide some indications about trends in clandestine manufacturing. In 2008, only 31 mt of ATS-related precursor chemicals under international control were reported seized—the lowest in a decade.

Seizures in 2008 included:

Amphetamine-group:

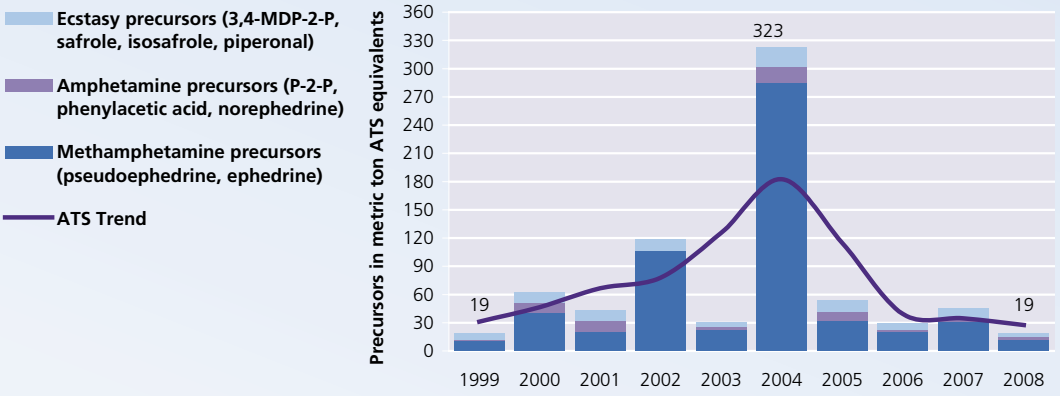
- Methamphetamine: 12.6 mt of ephedrine and 5.1 mt of pseudoephedrine, sufficient to manufacture approximately 11.8 mt of methamphetamine.[1]
- Amphetamine: 5,620 litres of phenyl-2-propoanone (P-2-P), sufficient for 2.8 mt of amphetamine or methamphetamine; 1.5 mt norephedrine, sufficient to manufacture 984 kg of amphetamine; and 155 kg of phenylacetic acid, sufficient for just 39 kg of amphetamine or methamphetamine.

Ecstasy-group:

- 2,823 litres of 3,4-MDP-2-P, enough to manufacture 2.3 mt of MDMA;
- 1,904 l of safrole oil, sufficient to manufacture 401 kg of MDMA;
- 1.4 mt of piperonal which could be converted into 527 kg of MDMA; and
- 1 l of isosafrole, used in the manufacture of MDMA.

Fig. 191: Reported seizures of ATS precursor chemicals, expressed in mt of ATS equivalents, 1999-2008

Source: UNODC calculations based on INCB data and conversion factors. (INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances,* 2009, March 2010 and previous years)



The low amounts of precursor chemicals seized are inconsistent with the size of the consuming market, suggesting that much of the trafficking of precursors needed for ATS manufacture goes undetected. Some of the decline is due in part to shipments being stopped before they depart through notification via INCB's PEN Online system. There is evidence of criminal organizations rapidly adapting their strategies to avoid control and continue illicit manufacture by: 1) shifting precursor chemical trafficking routes through new locations, such as Africa; 2) relocating manufacturing operations to new countries, such as moving laboratories from North America to Central America; 3) shifting to new physical forms of precursor chemicals, such as pharmaceutical preparations in tablet or liquid forms; and 4) utilizing precursor chemicals outside international control, such as derivatives of phenylacetic acid (PAA). In March 2010, the Commission on Narcotics Drugs at its fifty-third session decided to reschedule PAA to Table I, substantially increasing the international control over this precursor chemical.

1 These figures largely represent raw chemical seizures and in some cases pharmaceutical preparations, and thus are not representative of all precursors seized.

2.5.2 Seizures

Trafficking of amphetamine-type stimulants (ATS), along with their production, has come to affect the entire globe. Seizure data, however, point to different types of ATS prevailing in different parts of the world, and different trends can be observed in global and regional seizure totals for the different types of ATS.

Amphetamine-type stimulants are broadly categorized into two groups: the amphetamines group, comprised of amphetamine, methamphetamine and non-specified amphetamines, and the 'ecstasy' group. Total seizures in the amphetamines group reached 47.4 mt[7] in 2008, slightly exceeding the level in 2007 (43.8 mt), as well as the previous record level registered in 2006 (45.9 mt). On the other hand, 'ecstasy' seizures fell markedly in 2008, dropping to 3.86 mt[7] – the lowest level since 1999. Over the period 2000-2008, seizures of 'ecstasy' fluctuated considerably, while methamphetamine seizures were less erratic; in both cases, seizure totals stayed within the same order of magnitude. The most pronounced expansion over this period was observed in seizures of amphetamine, which grew almost eight-fold over a time span of eight years, mainly due to increases in the Near and Middle East.

While seizures of amphetamine in the Near and Middle East/South-West Asia represented almost two thirds of the global total in 2008, a majority of methamphetamine seizures were attributable to countries in East and South-East Asia. North America accounted for most of the remaining seizures of methamphetamine, as well as – for the first time – more than one half of global 'ecstasy' seizures. The significant increase in the North American share of global 'ecstasy' seizures was partly due to an increase in 'ecstasy' seizures in the United States, but also to decreases in other regions, notably West and Central Europe. On the other hand, West and Central Europe continued to account for approximately one third of global seizures of amphetamine. Almost 90% of seizures of non-specified amphetamines were recorded in West and Central Africa, which remains a priority area in terms of responding to the drug problem, starting with a better understanding of the nature of drugs in the illicit market.

Amphetamine

Global seizures of amphetamine amounted to a record 24.3 mt in 2008, essentially sustaining the high level of 2007 (23.7 mt). The Near and Middle East/South-West Asia and Europe together accounted for 97% of seizures in 2008. Since the year 2000, amphetamine seizures have grown considerably in both these regions, but the growth rate in the Near and Middle East/South-West Asia clearly outpaced that in Europe.

One caveat, however, needs to be made. Most of the seizures in the Near and Middle East/South-West Asia are in tablet form, and there are indications that – when converted into weight terms – the weight of the entire tablet is used, and not only the weight of the active ingredient (amphetamine). This could inflate the seizures in this part of the world by a factor of ten or more.[8] It does not seriously impact the growth rates, but possibly the absolute levels of seizures reported from the countries in the Near and Middle East/South-West Asia.

Reports of amphetamine seizures from countries in the Middle East continue to refer predominantly to tablets bearing the *Captagon* logo. The nature of the psychoactive ingredients in such tablets is not always clear, but reports suggest that amphetamine trafficked from South-East Europe is the main ingredient in *Captagon* tablets found in the consumer markets of the Middle East (notably Saudi Arabia), frequently alongside caffeine. Laboratories may also exist in countries along this route, possibly carrying out the conversion into tablet form. Jordan, Lebanon, Turkey and the Syrian Arab Republic serve as important transit points.

7 Amphetamine-type stimulants are seized in various forms, including liquid and tablet form, and may be reported by weight, volume, number of tablets or other units. In specific cases, seizure amounts may be reproduced as reported by countries, but aggregate quantities are expressed by weight. For the purposes of the aggregation, one tablet is assumed to contain 30 mg of active ingredient, with the exception of 'ecstasy' tablets, which are assumed to contain 100 mg of active ingredient. Moreover, one litre of liquid is assumed to correspond to one kilogram.

8 A recent forensic analysis of some 9,400 *Captagon* tablets seized in Iraq in the border region with Jordan, Saudi Arabia and the Syrian Arab Republic in 2009 revealed that the tablets had a weight between 163 and 170 mg and contained between 7 and 20 mg of amphetamine (in addition to 30-65 mg of caffeine and 8-39 mg of theophylline). (UNODC, *Global Smart Update*, Volume 2, October 2009, p. 8.) Taking the mid-points, there would be a factor of 12 between reporting the amphetamine contained in a tablet and the whole weight of the tablet.

Fig. 192: Seizures of amphetamine-type stimulants worldwide, 2000-2008

Sources: UNODC ARQ/DELTA

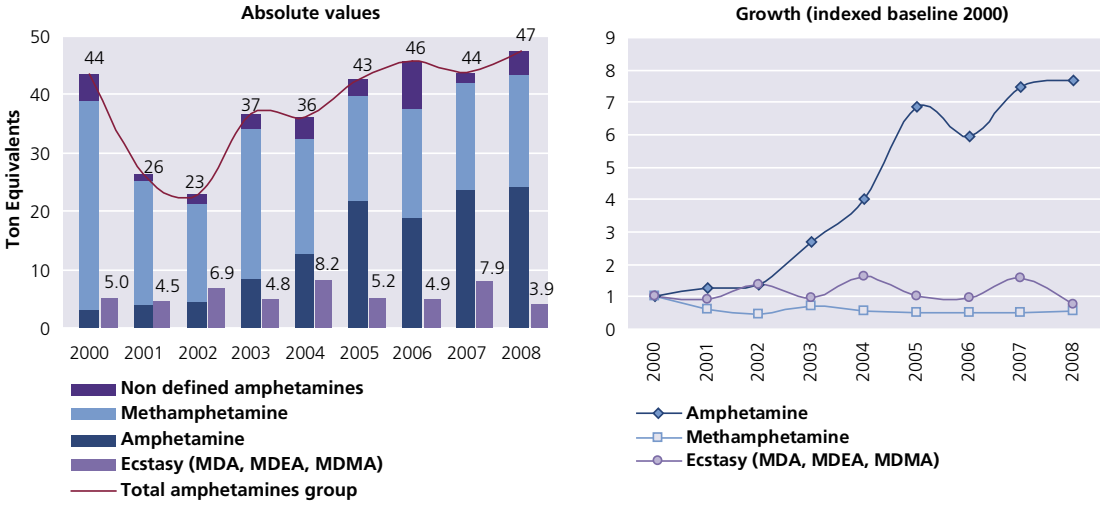
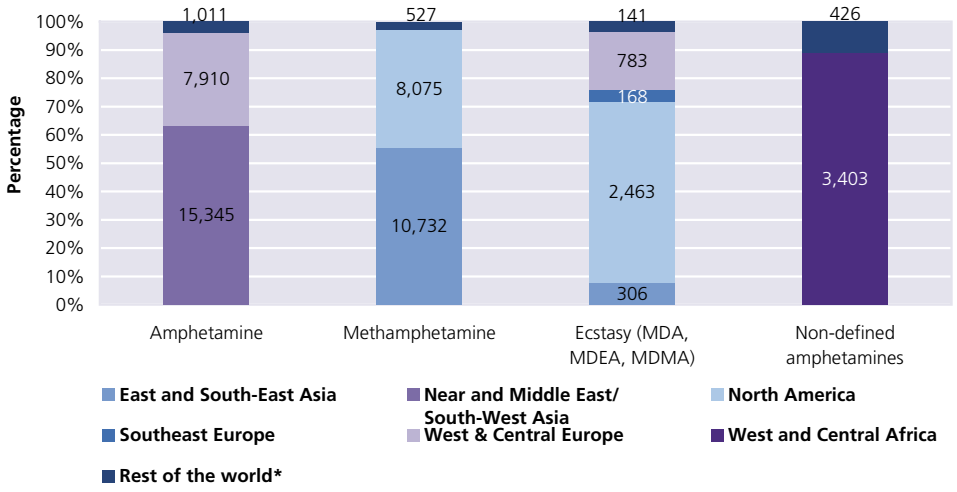


Fig. 193: Geographic distribution of ATS seizures by type, 2008

* The category "Rest of the world" refers to a different set of countries according to the drug type.

Sources: UNODC ARQ/DELTA



Annual seizures of amphetamine in Saudi Arabia rose steadily over the 2000-2007 period, reaching 13.9 mt[9] in 2007.[10] Saudi Arabia reported amphetamine seizures of 12.8 mt in 2008. The total for the Near and Middle East/South-West Asia amounted to 14.8 mt in 2007 and 15.3 mt in 2008. Reports from Lebanon,[11] Turkey, the United Arab Emirates and Yemen identified Saudi Arabia as a major destination for amphetamine (or specifically *Captagon*) trafficked on their territory in 2008, while Gulf States generally were destinations mentioned by the Syrian Arab Republic and Jordan. Large quantities of tablets believed to contain amphetamine were seized by Jordan (14.1 million tablets in 2008, up from

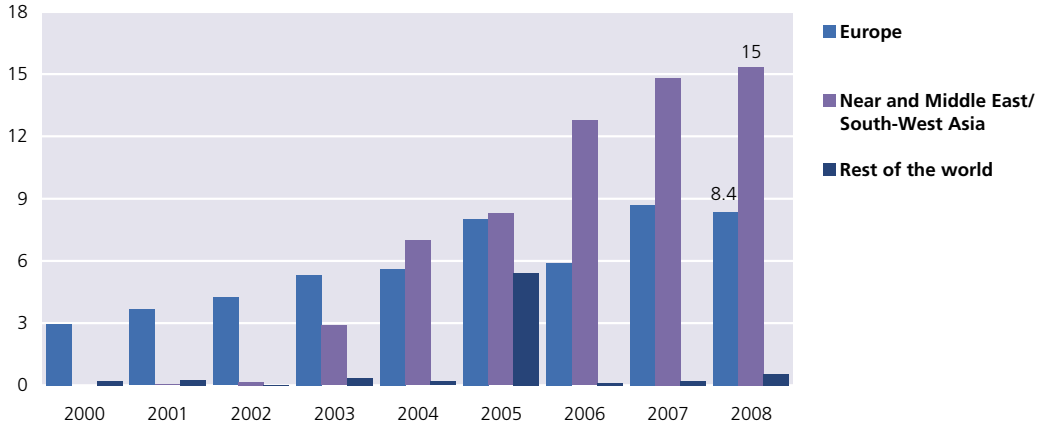
9 Data for Saudi Arabia relative to the period 2002-2007 were sourced from the World Customs Organization and ICPO/Interpol.

10 These quantities likely represent the bulk weight of seizures, including binders and adulterants present in *Captagon* tablets, and should therefore be interpreted with caution. Nevertheless, these remain extraordinarily large seizures and denote a clear long-term increasing trend.

11 Country report by Lebanon to the forty-third Subcommission on Illicit Drug Traffic and Related Matters in the Near and Middle East.

Fig. 194: Regional breakdown of global amphetamine seizures, 2000-2008 (ton equivalents)

Source: UNODC ARQ/DELTA



10.6 million in 2007), Yemen (13.4 million in 2008) and the Syrian Arab Republic (11.8 million tablets in 2008 and 12.0 million in 2007).

Amphetamine seizures in Europe amounted to 8.37 mt, sustaining the record level of 2007 (8.70 mt). A notable increase was registered in United Kingdom: the total for England, Wales and Northern Ireland rose by 65%, from 1.78 mt in the 2007/2008 financial year to 2.94 mt[12] in 2008/2009. Seizures also rose in Germany, from 810 kg in 2007 to 1.28 mt in 2008. These increases were offset by a decline in seizures in the Netherlands, which dropped to 1.16 mt in 2008 (from 2.81 mt in 2007). Significant quantities were also seized by Belgium (411 kg), Sweden (362 kg), Poland (342 kg), Norway (260 kg), Bulgaria (187 kg) and Turkey (163 kg).

Mexico, which historically has been linked with significant manufacture of methamphetamine, reported 251 kg of amphetamine seizures in 2008 – nine times the level in 2007 (27.1 kg).

Methamphetamine

Global methamphetamine seizures remained stable for the fourth year in a row, amounting to 18.2 mt in 2007 and 19.3 mt in 2008. East and South-East Asia (notably China) and North America (notably the United States) continued to account for the vast majority of methamphetamine seizures.

In 2008, total methamphetamine seizures in East and South-East Asia remained stable (10.7 mt). In China, seizures amounted to 6.09 mt in 2007 (the largest worldwide for that year) and 6.15 mt in 2008. According to Chinese authorities,[13] large amounts of amphetamine-type stimulants entered Yunnan province through the border with Myanmar. Seizures of amphetamine-type stimulants from Europe and South America also increased. China reported 460 arrests of foreign nationals for trafficking of amphetamine-type stimulants in 2007; of these, 397 involved nationals of Myanmar.

Seizures in Thailand rose to 1.98 mt in 2008, returning to a level comparable to that registered in 2004 (2.12 mt). The World Customs Organization reported[14] that, in 2008, Thailand was the most frequent destination country in the Asia-Pacific region among methamphetamine seizure cases recorded in the Customs Enforcement Network database. In particular, 157 seizures were made on the route from the Lao People's Democratic Republic to Thailand.

Significant increases in methamphetamine seizures were also registered by the Philippines and Malaysia. The Philippines also reported 10 clandestine laboratories manufacturing methamphetamine in 2008, and a concurrent increase in the price of methamphetamine hydrochloride.

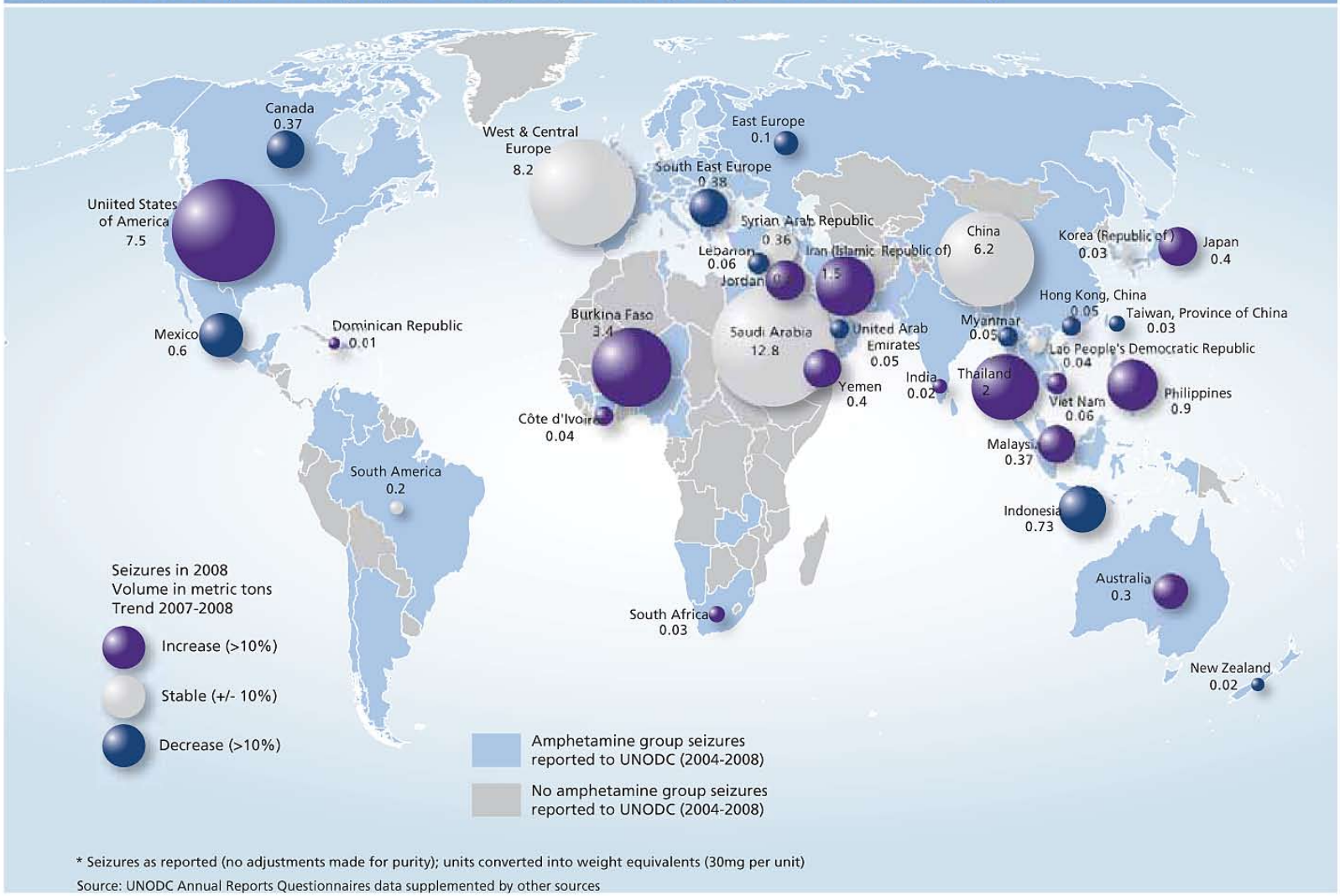
North America accounted for total methamphetamine seizures of 8.08 mt in 2008. Seizures in the United States rose markedly, from 4.89 mt in 2007 to 7.37 mt in 2008 (the largest worldwide for that year). The increase was offset by the portion of the North American total seized by Canada, which reported extraordinarily large seizures in 2007 (1.54 mt) but only 360 kg in

12 The total for the United Kingdom was not available. UNODC estimates total seizures of amphetamine in the UK at 3.55 mt.

13 China National Narcotics Control Commission. Quoted in country presentation by China, Global SMART Programme Meeting for East Asia, 29-31 July 2009, Bangkok, Thailand.

14 World Customs Organization Regional Intelligence Liaison Office for Asia and the Pacific, *Analysis Report 2009.1.*

Map 29: Seizures of amphetamines-group substances, 2008 (countries reporting seizures* of more than 10 kg)

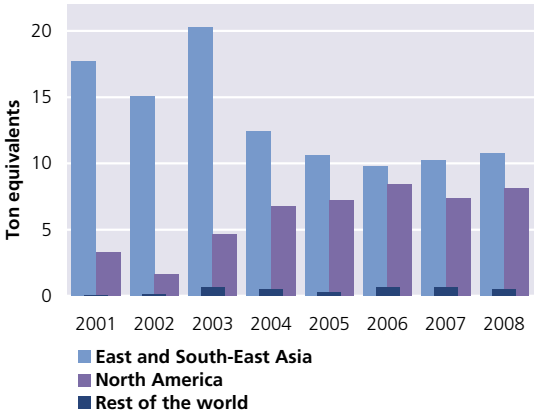


* Seizures as reported (no adjustments made for purity); units converted into weight equivalents (30mg per unit)

Source: UNODC Annual Reports Questionnaires data supplemented by other sources

Fig. 195: Methamphetamine seizures worldwide (ton equivalents), 2001-2008

Source: UNODC ARQ/DELTA



2008. In Mexico, seizures fell from 920 kg in 2007 to 341 kg in 2008 – the lowest level since 1998.

According to the United States Department of Justice,[15] available data indicated that methamphetamine availability in the United States was directly related to methamphetamine manufacture trends in Mexico. Following declines in domestic methamphetamine manufacture registered after 2004 in the United States — which also impacted on the domestic availability of this substance — methamphetamine seizures on the south-west border of the country rose significantly between 2008 and 2009. Moreover, price and purity data from the US Drug Enforcement Agency indicated an increase in the availability of methamphetamine in the United States. Between the fourth quarter of 2007 and the third quarter of 2009, the average purity of methamphetamine followed a generally increasing trend, rising from 41% to 69%, while the price per pure gram followed a generally decreasing trend, from US$279 to US$127.[16] However, the increased availability of methamphetamine in the United States does not appear to have led to increased use of this drug.

Although global methamphetamine seizure totals have remained stable, seizure data point to illicit trade in methamphetamine in countries which have traditionally not been linked with this drug. Starting in 2005, the Islamic Republic of Iran has seized increasing quantities of methamphetamine. The country's combined seizures of amphetamine and methamphetamine amounted to 1.47 mt in 2008 and 2.43 mt in 2009.[17] The results of

15 US Department of Justice, *National Drug Threat Assessment 2010*.

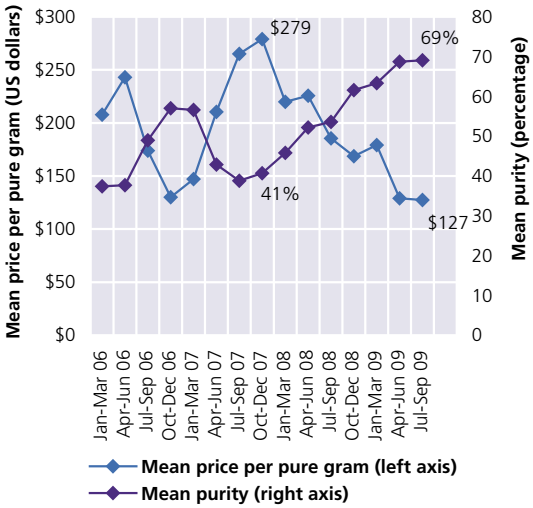
16 Ibid. Based on data extracted from *System To Retrieve Information on Drug Evidence (STRIDE)*.

17 Islamic Republic of Iran, Drug Control Headquarters, *Drug Control in 2009*.

Fig. 196: Methamphetamine prices and purities in the United States, 2006-2009 (STRIDE*)

*STRIDE is a database of drug exhibits maintained by the US Drug Enforcement Administration. The values reported here represent averages of all methamphetamine purchases in the database. Although not collected as a representative sample of the US market, STRIDE data reflect the best information available available on changes in methamphetamine price and purity in the US market.

Source: US Department of Justice, *National Drug Threat Assessment 2010*



research undertaken in the Islamic Republic of Iran, as reported[18] by its Drug Control Headquarters, indicate that the use of methamphetamine has increased. In Afghanistan, the first confirmed seizure of methamphetamine was made in January 2009, in the city of Lashkar Gah (Hilmand province), although a survey undertaken in 2009 indicates a very low level of ATS use. In Europe, while seizures of ATS continue to consist predominantly of amphetamine and 'ecstasy', seizures of methamphetamine have also increased in a number of countries, notably the Nordic countries.

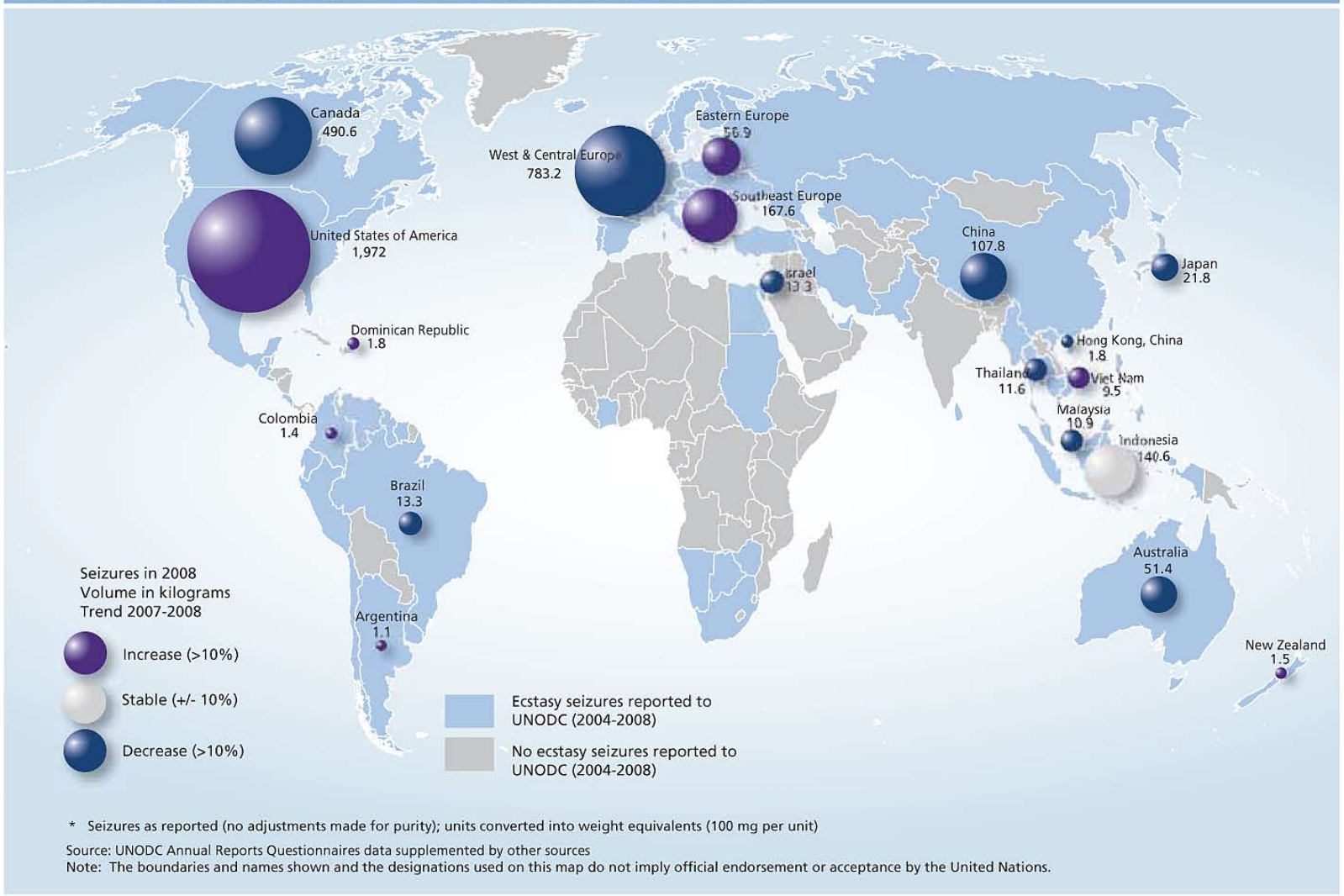
'Ecstasy"

Global seizures of 'ecstasy' fell from a record level of 7.94 mt in 2007 to 3.86 mt in 2008, the lowest level since 1999. The low level was partly due to significantly reduced seizures in the Netherlands and Australia. On the other hand, seizures increased markedly in the United States. North America, Europe and East and South-East Asia collectively accounted for 98% of global 'ecstasy' seizures in 2008.

Over the period 2004-2008, seizures of 'ecstasy'-type substances in the United States followed a generally

18 *Drug control in 2008, Annual Report and Rapid Situation Assessment*, Drug Control Headquarters, Islamic Republic of Iran.

Map 30: Seizures of ecstasy, 2008 (countries reporting seizures* of more than 10 kg)



* Seizures as reported (no adjustments made for purity); units converted into weight equivalents (100 mg per unit)

Source: UNODC Annual Reports Questionnaires data supplemented by other sources

Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Fig. 197: European methamphetamine seizures 2005-2008

Source: UNODC ARQ/DELTA

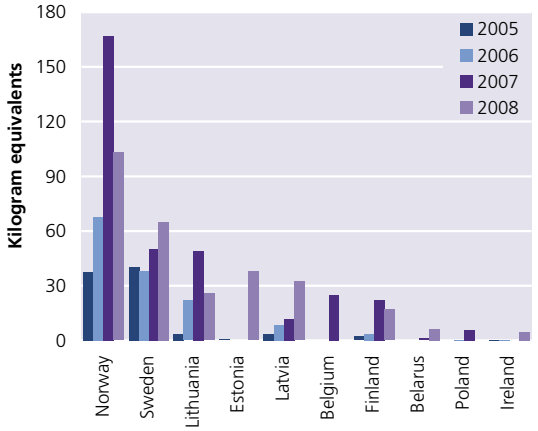
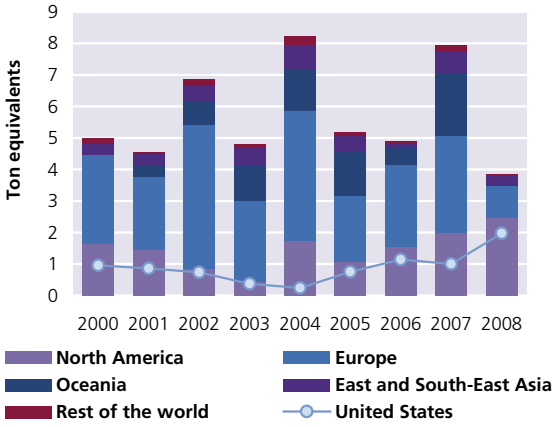


Fig. 198: 'Ecstasy' seizures worldwide, 2000-2008 (ton equivalents)

Source: UNODC ARQ/DELTA



increasing trend. This came after declines between 2000 and 2003 (in line with reports of reduced availability and reduced trafficking of 'ecstasy' from the Netherlands to the United States). In 2008, seizures almost doubled to reach a record level, rising from 1 mt in 2007 to nearly 2 mt. According to the United States Department of Justice,[19] the resurgence of MDMA availability in the United States was fuelled by manufacture in Canada and smuggling into the US across the northern border. MDMA seizures at the northern border (measured in dosage units) more than doubled between 2008 and 2009. However, availability appeared to be stabilizing.

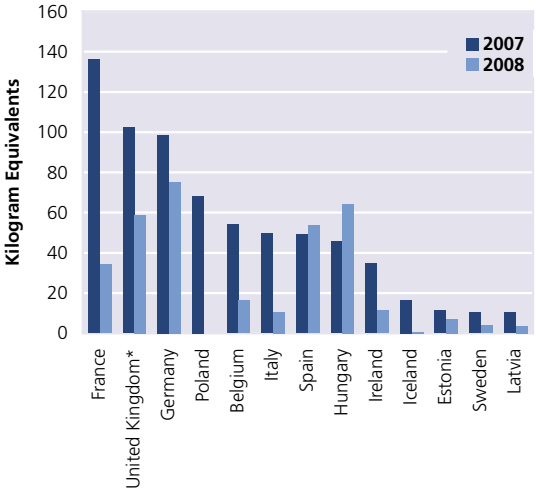
In Europe, seizures of 'ecstasy' fell sharply, from 3.07 mt in 2007 to 1.01 mt in 2008. The drop was mainly due to smaller seizures reported by the Netherlands, which fell from 2.16 mt to 409 kg. Seizures of 'ecstasy' tablets in particular by the Netherlands fell from 8.43 million tablets in 2007 to 249,000 tablets in 2008. A downward trend in 'ecstasy' seizures was observed across West and Central Europe: of 31 countries and territories for which UNODC had collated seizures of 'ecstasy' in 2007, 26 registered a decrease in 2008. There are indications that improved precursor controls may have made access to the needed chemicals more difficult, thus reducing manufacture and trafficking of MDMA.

Australian 'ecstasy' seizures fell drastically, from the record level of 2007 (1.97 mt) to 51.4 kg in 2008. The figure for 2007 includes a single extraordinarily large seizure of approximately 15 million tablets.[20] However, the level in 2008 is low also in comparison with previous years. Over the period 2003-2006, 'ecstasy' seizures in Australia averaged 1.10 mt. Seizures also fell in East and South-East Asia, from 740 kg in 2007 to 306 kg in 2008.

Fig. 199: Major 'ecstasy' seizures in West and Central Europe (excluding the Netherlands), 2007-2008

* Figures for the United Kingdom are UNODC estimates based on reported totals for England, Wales and Northern Ireland.

Source: UNODC ARQ/DELTA



19 National Drug Intelligence Center, United States Department of Justice, *National Drug Threat Assessment 2010*, February 2010.

20 This was reported by the Australian Crime Commission in *Illicit Drug Data Report 2006-07, Revised Edition*. This seizure, which was part of a year-long controlled delivery operation, was also confirmed separately to UNODC by the Australian Federal Police. In the reply to the annual reports questionnaire for 2007, Australia reported seizures amounting to 470 kg.

2.5.3 Consumption

Amphetamine-type stimulants (ATS) are various synthetic substances broadly categorized into amphetamines-group substances—primarily amphetamine, methamphetamine and methcathinone—and ecstasy-group substances (MDMA and its analogues). In many regions the primary source of amphetamine-group substances is via illicit manufacture in clandestine laboratories while in other regions they are prescription pharmaceutical stimulants obtained via the grey or black markets, used non-medically.

UNODC estimates that between 13.7 and 52.9 million people used amphetamine-group substances at least once in the preceding year, with a corresponding annual prevalence range of 0.3% to 1.2% of the population aged 15 to 64. The width of the ranges for amphetamines-group substances - much more than for heroin or cocaine - has further widened since last year (15.8 - 50.6 million). This reflects a higher number of estimated users in and new availability of data on ATS in the Caribbean countries, and an increased level of uncertainty for the estimates produced for Asia, which is thought to be one of the main markets for ATS. The estimates for Asia range from 4.4 to 37.9 million users, reflecting the uncertainties regarding the use of amphetamine-group substances in the region, especially with the lack of recent or reliable estimates in countries with large populations like China and India.

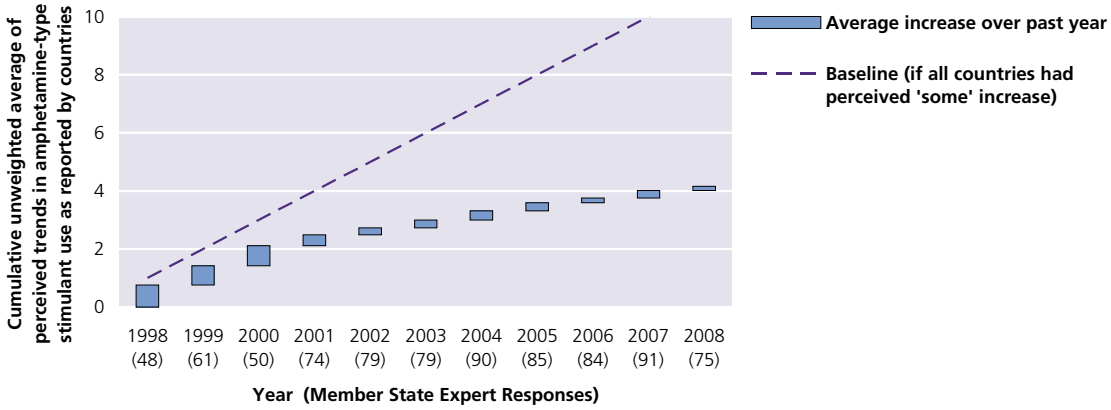
The number of 'ecstasy'-group users ranges between 10.5 and 25.8 million people worldwide, or 0.2% to 0.6% of the population in the 15-64 age group. This range widened from 2007 (11.6-23.5 million). The speed with which ATS markets are appearing or expand-

Table 27: Estimated number of people who used amphetamines-group substances at least once in the past year and prevalence among population aged 15-64, by region, 2008

Region/ subregion (Amphetamines-group)	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population aged 15-64 (lower)	-	Percent of population aged 15-64 (upper)
Africa	1,550,000	-	5,200,000	0.3	-	0.9
Eastern Africa	Subregional estimate cannot be calculated					
North Africa	260,000	-	540,000	0.2	-	0.4
Southern Africa	310,000	-	1,090,000	0.3	-	1.0
West and Central Africa	Subregional estimate cannot be calculated					
Americas	4,760,000	-	5,890,000	0.8	-	1.0
Caribbean	30,000	-	510,000	0.1	-	1.9
Central America	320,000	-	320,000	1.3	-	1.3
North America	3,090,000	-	3,200,000	1.0	-	1.1
South America	1,320,000	-	1,860,000	0.5	-	0.7
Asia	4,430,000	-	37,990,000	0.2	-	1.4
Central Asia	Subregional estimate cannot be calculated					
East/ South-East Asia	3,430,000	-	20,680,000	0.2	-	1.4
Near and Middle East	Subregional estimate cannot be calculated					
South Asia	Subregional estimate cannot be calculated					
Europe	2,500,000	-	3,190,000	0.5	-	0.6
Eastern/South-East Europe	900,000	-	1,480,000	0.3	-	0.5
Western/Central Europe	1,600,000	-	1,710,000	0.6	-	0.6
Oceania	470,000	-	630,000	2.0	-	2.8
Global	**13,710,000**	**-**	**52,900,000**	**0.3**	**-**	**1.2**

Fig. 200: Global trend in the perception of ATS use: cumulative un-weighted average* as reported by national experts

* The graph measures the trend from countries reporting an increase or decrease in drug use. It does not measure the trend in terms of number of drug users.



ing, the general confusion on what constitutes ATS and the limited reporting and/or absence of reporting all contribute to the limited data availability worldwide.

The type of amphetamines-group stimulants used in different regions varies considerably. Users in East and South-East Asia primarily consume methamphetamine, while in the Near and Middle East, the use of tablets sold as *Captagon* is more common. In Europe, users commonly consume amphetamine, with the exception of the Czech Republic and Slovakia, where methamphetamine use is predominant.

In North America, nearly half of the synthetic stimulant users consume methamphetamine, while in South America and the Caribbean it is mostly pharmaceutical stimulants. In West, Central and East Africa and some parts of Southern Africa, the amphetamine groups may also comprise various pharmaceuticals. In South Africa, methamphetamine and methcathinone are the common amphetamine-group substances consumed. In Oceania, methamphetamine is the common synthetic stimulant consumed, though there is also use of amphetamine.

Fig. 201: Amphetamine-group substance use: lower and upper ranges of numbers and annual prevalence globally and by region, 2008

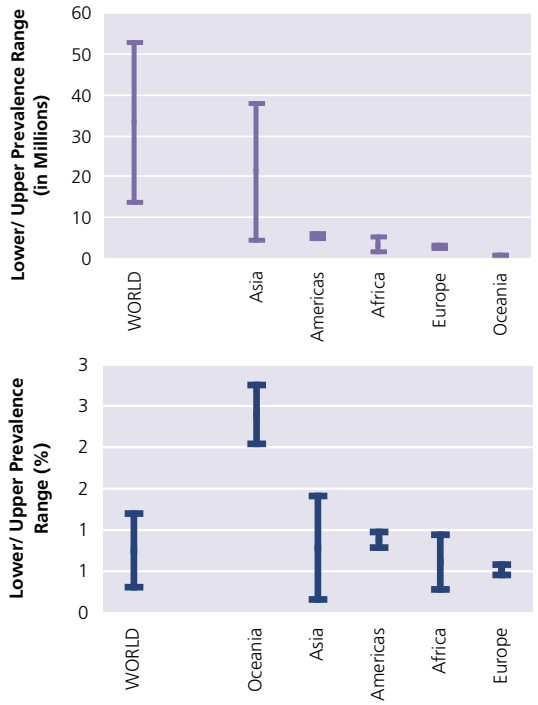


Fig. 202: World annual amphetamines-group substance users

Source: UNODC ARQ

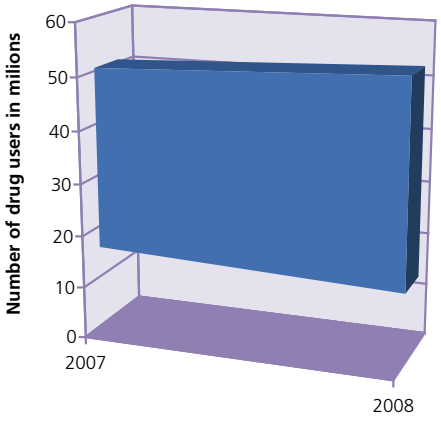
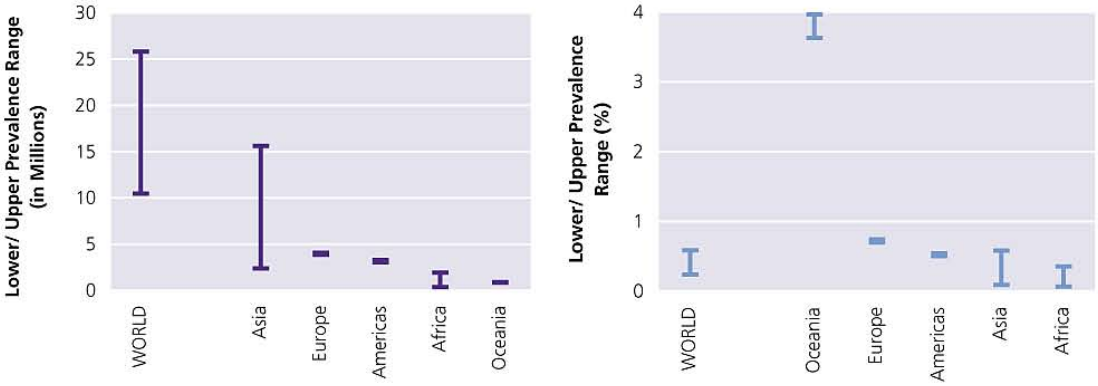
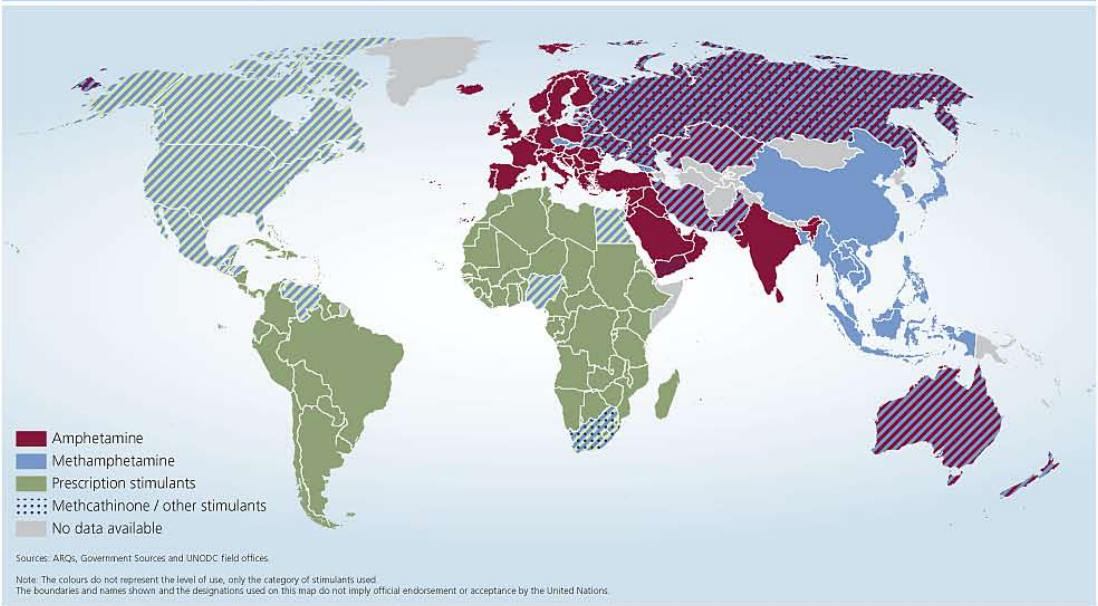


Fig. 203: 'Ecstasy' use: lower and upper ranges of numbers and annual prevalence globally and by region, 2008



Map 31: Use of main types of amphetamine-group substances



In 2008, 82 Member States responding to the ARQ provided an expert perception on trends in amphetamines use. Out of these, half perceived amphetamines use to be stable, while 33% thought it had increased and 17% reported a decline. More experts from developing countries (non-OECD) reported a perceived increase in amphetamine-type stimulants use than experts from developed countries (OECD).

Uncertainties in estimates of amphetamines-group-stimulants use in Asia is highest, though experts in East and South-East Asia report increasing use

In Asia, between 0.2% and 1.4% of the population aged 15-64 - or between 4.4 and 37.9 million people - are estimated to have used amphetamines-group substances in the past year. The wide range and uncertainty in the estimates stem from missing information on users from China and India. Chinese authorities have reported recent increases in the use of amphetamines-group stimulants, particularly methamphetamine, but the baseline is not known.[21] Also, due to missing data, subregional estimates for Central Asia, the Near and Middle East and South Asia can not be calculated. New data for 2008 was available only for three countries/territories in Asia: Hong Kong (China), where the use of amphetamine-type stimulants has largely remained unchanged, Indonesia, which reported a decrease from 0.3% in 2005 to 0.2% in 2008, and Afghanistan, where a new survey found negligible use of ATS in 2009.

21 2008 ARQ submitted by China.

Table 28: National experts' perception of trends in ATS use by region, 2008

Source: UNODC ARQ

Region	Member States responding	Use problem increased*	Percent use problem increased	Use problem stable	Percent use problem stable	Use problem decreased*	Percent use problem decreased
Africa	6	2	33%	2	33%	2	33%
Americas	15	4	27%	9	60%	2	13%
Asia	29	13	45%	10	34%	6	21%
Europe	31	8	26%	20	65%	3	10%
Oceania	1	0		0		1	
Global	**82**	**27**	**33%**	**41**	**50%**	**14**	**17%**

* Identifies increases/decreases ranging from either some to strong, unweighted by population.

Out of the 29 Member States in Asia that responded to the 2008 ARQ and provided expert perception on ATS use, 13 countries reported some increase in ATS use, while eight reported a stable trend over the past year. Most of the countries that have reported an increase in amphetamines-group substance use over the last year are from East and South-East Asia, particularly Bangladesh, China (including Hong Kong), Indonesia, Japan, Mongolia, Myanmar, Thailand and Viet Nam.

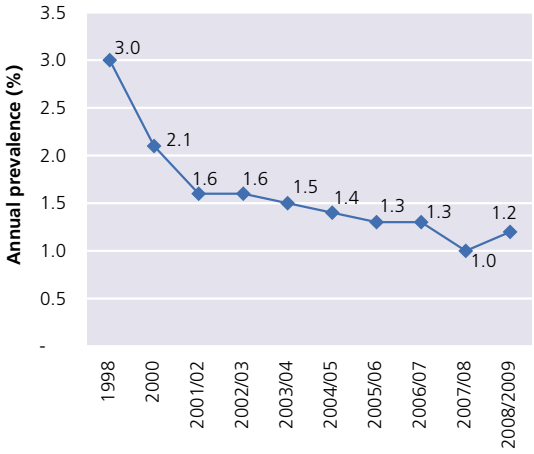
Recent data from the Philippines (2.1%, 2008), Thailand (1.4%, 2007) and the Lao People's Democratic Republic (1.4%, 2008[22]) place them as the countries with the highest annual prevalence of amphetamines-group substance use in East and South-East Asia.[23]

Mixed trends of amphetamines-group substance use observed in Europe

In Europe, between 2.5 and 3.2 million people aged 15-64 had used amphetamines-group substances at least once in the past year, and the annual prevalence is estimated at between 0.5% to 0.6% of the population aged 15-64. The range is higher than the one reported last year due to increases observed in countries where new data for 2008 were reported (not offset by the decreasing trends also observed in some countries). Relatively high prevalence rates in the general population were also reported for South-East European countries where for the first time data on ATS use was made available: Bosnia and Herzegovina (1%), Montenegro (0.5%) and Serbia (0.2%).[24] Bulgaria revised its estimate from 0.5 to 1%. The Czech Republic, Denmark, the United Kingdom, Norway and Estonia remain countries with higher than average annual prevalence of amphetamine-groups substance use while France, Greece, Romania and Malta remain low prevalence countries. After the general increase in the 1990s, in 2007, there were stabilizing or even downward trends in amphetamine consumption in Europe.[25] However, new data for 2008 suggest that the trend is increasing again in some countries.

Fig. 204: Trends in annual prevalence of amphetamine use among the population aged 16-59 in England and Wales

Source: Home Office Statistical Bulletin, *Drug Misuse Declared: Findings from the 2008/09 British Crime Survey*, UK Home Office, July 2009



According to European school survey[26] data for 2007, the lifetime prevalence of amphetamine use ranged from 1% to 8% in EU Member States, Norway and Croatia, with high levels reported from Bulgaria and Latvia (both 6%).

22 UNODC estimate.

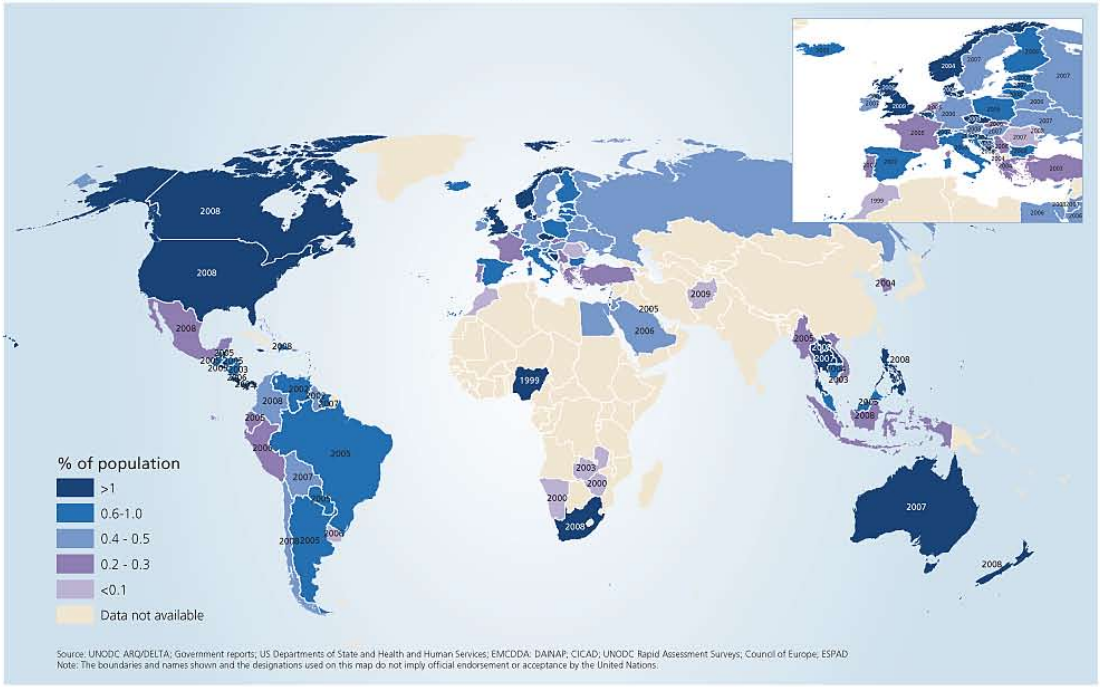
23 Estimates for the Philippines and the Lao People's Democratic Republic are for 2008, while for Thailand, they are for 2007.

24 UNODC estimate extrapolated from school surveys.

25 EMCDDA, *Drug Situation in Europe,* 2009.

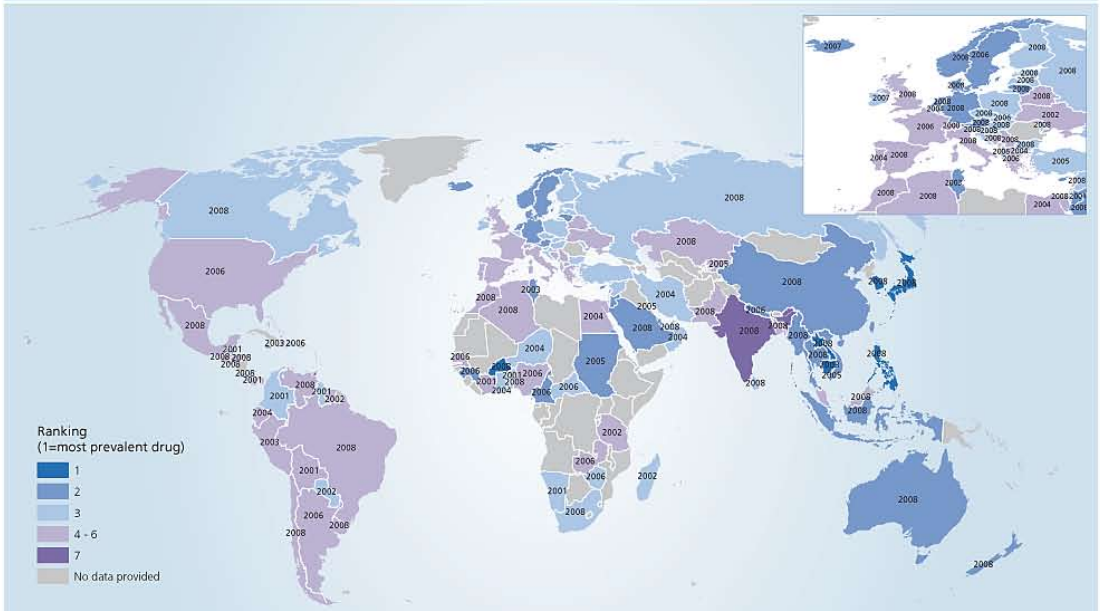
26 European School Survey Project on Alcohol and Other Drugs (ESPAD).

Map 32: Use of amphetamines, 2008 (or latest year available)



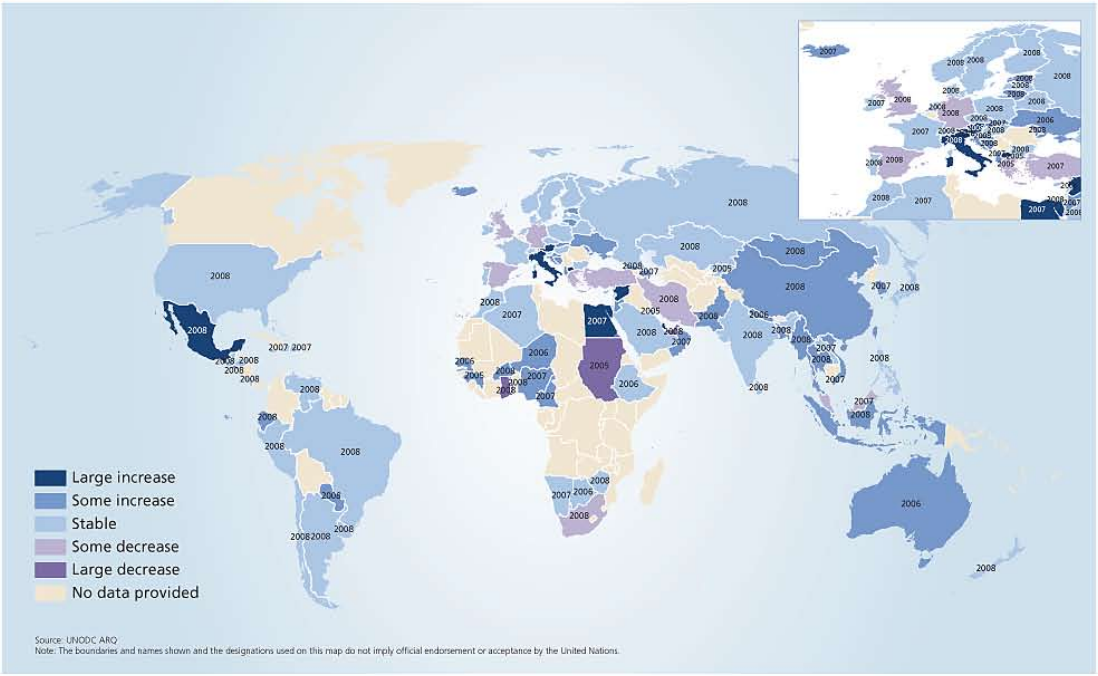
Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA: DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 33: Ranking of amphetamines in order of prevalence, 2008 (or latest year available)



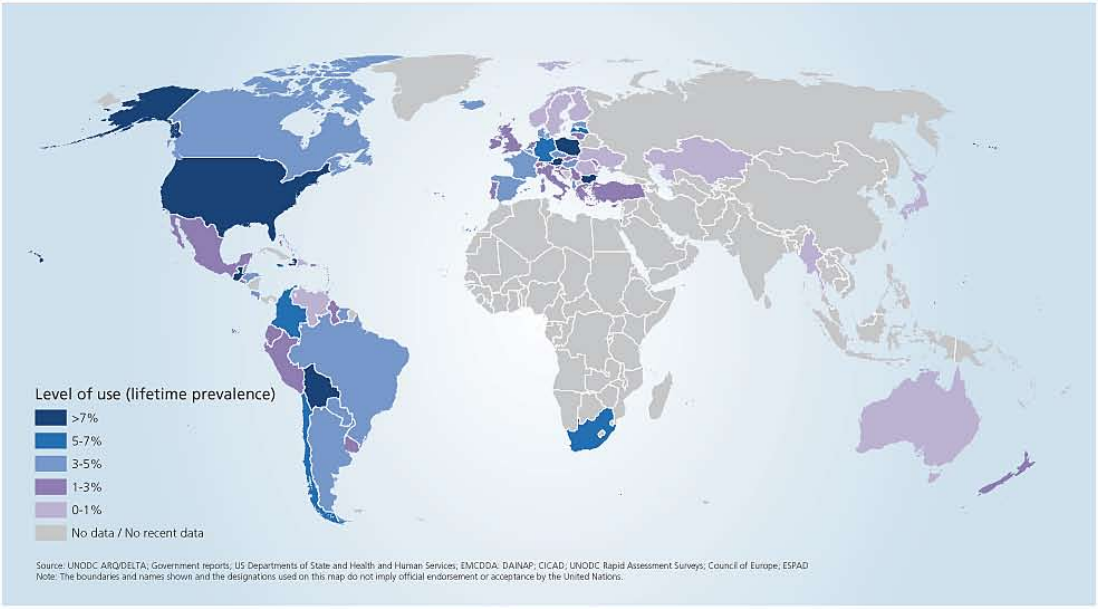
Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA: DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 34: Expert perception of trend changes in the use of amphetamines in 2008 (or latest year available)



Source: UNODC ARQ
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 35: Prevalence (%) of lifetime amphetamine-type stimulants use among young people



Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA: DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Fig. 205: Trends in amphetamines-group substance use among the population aged 15-64 in European countries where new information was reported in 2008 or 2009

Source: UNODC (for Scotland the age group is 16-64)

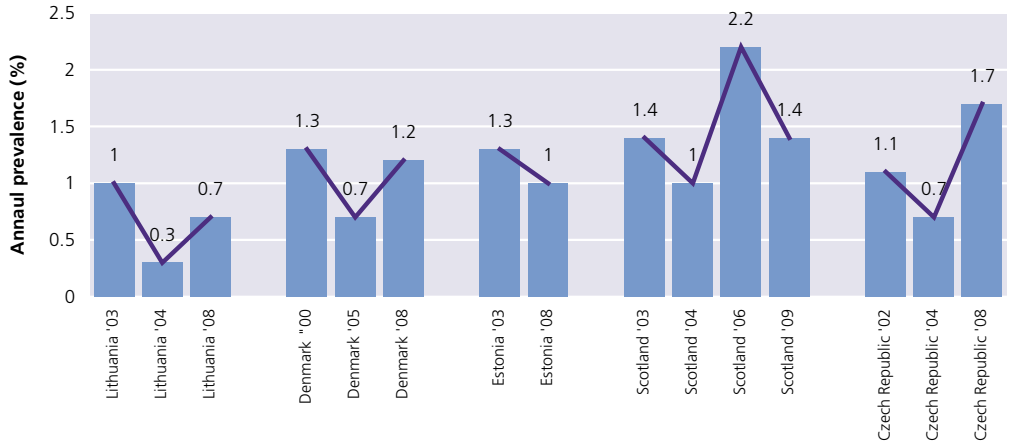
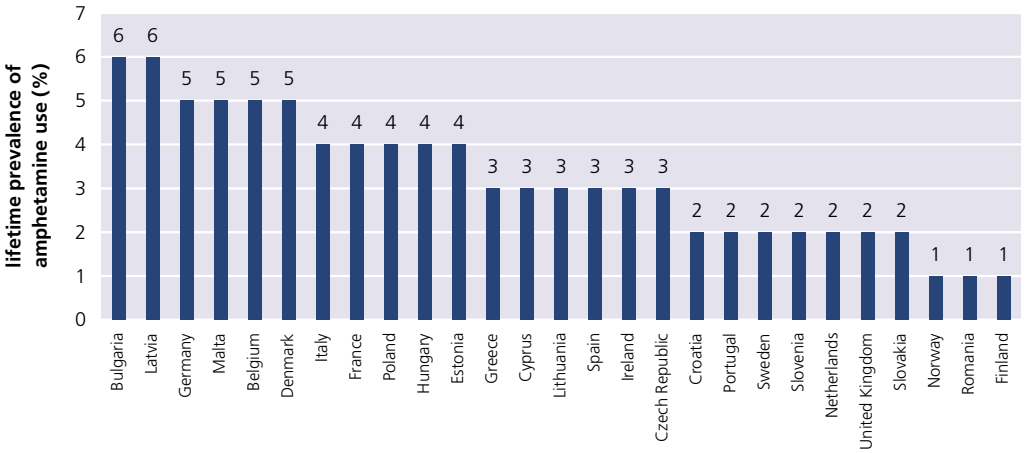


Fig. 206: ESPAD 2007: Lifetime prevalence of amphetamines use among students (aged 15-16)



While the treatment demand for amphetamine-group substances is generally low in Europe, it is particularly high (64% of all treatments in 2008) in the Czech Republic. This reflects the country's high prevalence of methamphetamine use (1.7% among the general population in 2008), the highest in Europe. In Slovakia, the percentage of treatment admissions for methamphetamine is also high (32%), suggesting that despite the relatively low prevalence of methamphetamine use reported in 2006 (0.3% of the population aged 15-64), problem drug use related to it is sizable. In these two countries, injection is the most commonly reported route of administration for methamphetamine.[27]

27 EMCDDA, *Drug Situation in Europe,* 2009.

In South Africa, amphetamine-group substances use is increasing, while there is little information from most other parts of the African region

In Africa, between 1.5 and 5.2 million people are estimated to have used amphetamine-group substances in the past year, an increase from the 1.4 - 4 million people estimated for 2007. The wide range in the estimates is due to the lack of recent or reliable estimates in West, Central and East Africa. Recent annual prevalence estimates in Africa are available from South Africa (0.7%-1.4%, 2008), Egypt (0.4%-0.5%, 2006) and Zambia (0.1%, 2003). The higher range level in 2008 is mainly due to an increase observed in South Africa, where the annual prevalence increased from a range of 0.5%-0.8% in 2006 to 0.7%-1.4% in 2008. Within South Africa, the use of methamphetamine remains particularly high in Cape Town, where methamphetamine remained the

Fig. 207: Treatment demand for methamphetamine in the Czech Republic, 2002-2008

Source: Czech National Monitoring Centre for Drugs and Drug Addiction, *Annual Report: The Czech Republic, 2008 Drug Situation*, September 2009

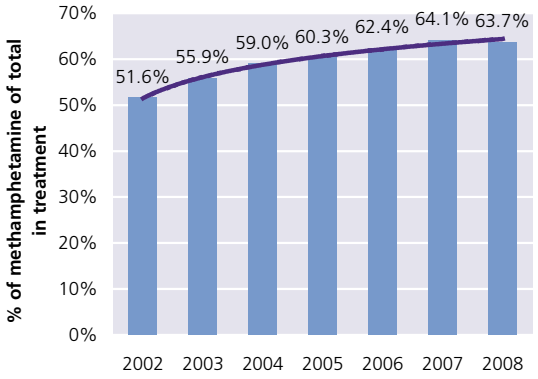
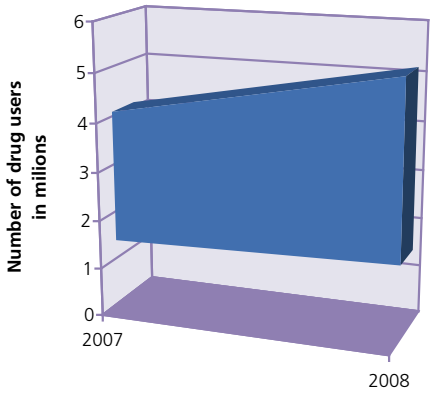


Fig. 208: Annual amphetamine-group users in Africa

Source: UNODC ARQ



most common primary drug reported by treatment patients in the first half of 2009.[28]

Decreasing trends in North America

Amphetamine-group substance use remains high in North America, though recent survey data suggest a decline in the use of amphetamines. The annual prevalence of all stimulants use in the United States among the population aged 12 years and older was reported as 1.1% in 2008; a further decline from 1.2% in 2007 and 1.5% in 2006.[29]

Fig. 209: South Africa: trends in treatment demand in Cape Town with methamphetamine as the primary substance, % of all drug treatment, 2001-2009

Source: South Africa Community Epidemiology Network on Drug Use (data are reported bi-annually – (a) represents the first half and; (b) the second half of the year)

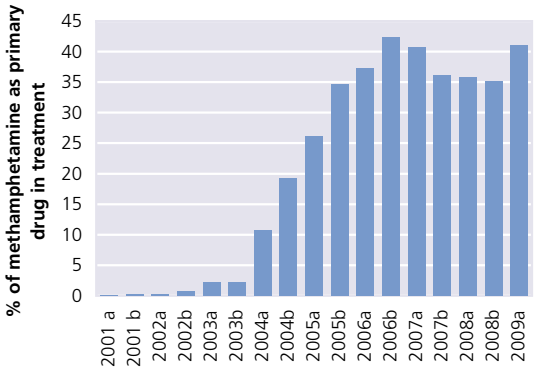
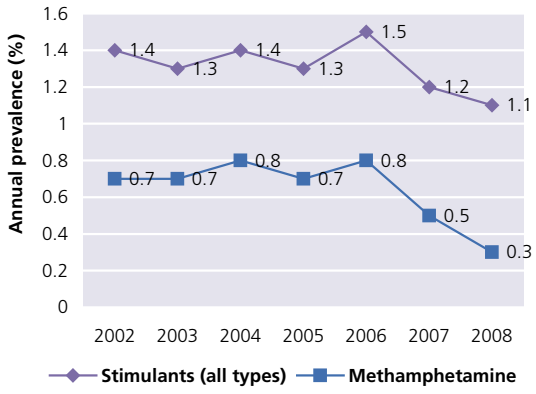


Fig. 210: United States: Annual prevalence of stimulants and methamphetamine use in the population aged 12 and older, 2002-2008

Source: Substance Abuse and Mental Health Services Administration. *Results from the 2008 National Survey on Drug Use and Health: National Findings*



A decrease in the annual prevalence of methamphetamine use was also observed among young adults aged 18-25, from 0.6% in 2002 to 0.2% in 2008.[30] While methamphetamine use in the general US workforce also dropped from 0.14% in 2007 to 0.11% in 2008, the proportion of positive urine test for amphetamine increased from 0.40% to 0.45% in the same period.[31]

28 Pluddemann A., Parry C., Bhana A., Dada S., and Fourie D., *Alcohol and Drug Abuse Trends: January – June 2009,* Phase 26 South African Community Epidemiology Network on Drug Use (November 2009).

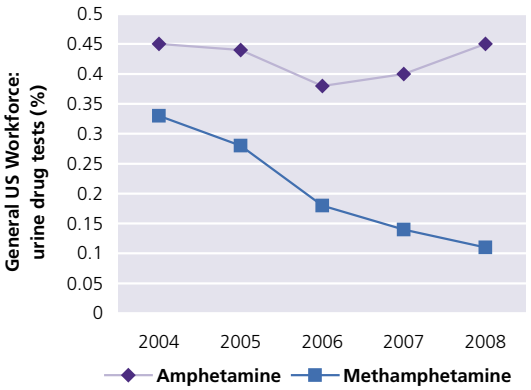
29 Substance Abuse and Mental Health Services Administration, *Results from the 2008 National Survey on Drug Use and Health: National Findings,*, US Department of Health and Human Services, Office of Applied Studies, 2009.

30 Ibid.

31 Quest Diagnostics, *Drug Testing Index*, May 2009.

Fig. 211: United States: percentage of positive drug tests for amphetamine-group substances in the US general workforce, 2004-2008

Source: Quest Diagnostics, *Drug Testing Index*



In contrast to the United States, Canada registered an increase in amphetamine-group substance use between 2004 and 2008. In Canada, the annual prevalence of amphetamines-group stimulants use was reported in 2008 as 1.5% among the population aged 15-64, compared to 1% in 2004. The current prevalence of amphetamine-group substances use is substantially higher than that reported for opioid pain relievers. In the Canadian Alcohol Drug Use Monitoring Survey, one in four drug users reported the use of stimulants to 'get high'.[32]

Experts in Mexico perceive an increase in amphetamine use. The annual prevalence of amphetamine use was estimated at 0.16% of the population aged 12-65 in 2008. The annual prevalence of amphetamine and methamphetamine use among 12-19 year olds was reported as 1% and 0.4%, respectively.

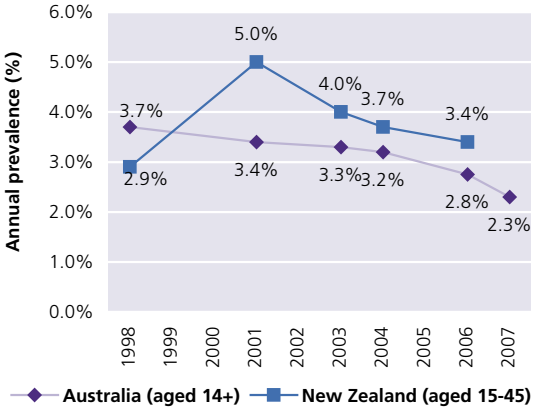
Mixed trends for amphetamines-group substance use in South America and Caribbean

Experts in many countries in South America, in particular Ecuador, El Salvador and Paraguay, report an increase in methamphetamine use over the past year. In 2008, there were an estimated 1.3 to 1.8 million people (annual prevalence 0.5%-0.7%) who had used amphetamine-group substances in the region. In 2008, new information was made available to UNODC from several Caribbean countries. The annual prevalence of amphetamine-group substance use in this region ranges from 0.1% to 1.9% of the population aged 15-64 (between 30,000 and 500,000 people). The wide range is mainly due to uncertainties arising from absence of reliable estimates in the region and the wide range of estimates observed in the countries where data on annual prevalence could be estimated.[33] In Central and South America, new information for 2008 show a minor increase in Suriname (from 0.6% to 0.7% of the annual prevalence of people aged 12-65) and a stabilization in Colombia and Chile where the annual prevalence remained at 0.5% and 0.4%, respectively. Panama revised its estimate for the annual prevalence of ATS use among its adult population for 2003 (latest year available) from 0.6% to 1.2%.

32 Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey: Summary of Results for 2008.*

Fig. 212: Annual prevalence of amphetamine-group use, 1998-2007

Source: Australian Institute of Health and Welfare, *2007 National Drug Strategy Household Survey: Drug Statistics,* 22, Canberra, 2008; Wilkins C. and Sweetsur P., *Trends in population drug use in New Zealand: Findings from national household survey of drug use in 1998, 2001, 2003 and 2006,* New Zealand Medical Journal, 121, 61-71, 2008



Problem methamphetamine use high in Oceania, though improving

The prevalence of amphetamines use in New Zealand (2.1% among the population aged 16-64) in 2008 and Australia (2.7% among the population aged 15-64) in 2007 remains one of the highest in the world, though there are signs of a declining trend in recent years. In some of the US territories in the Pacific there are reports of high methamphetamine use among young people where the lifetime prevalence ranged from 13.1% in the Marshall Islands to 5.9% in Guam and 4.9% in Commonwealth of the Northern Mariana Islands (CNMI).[34]

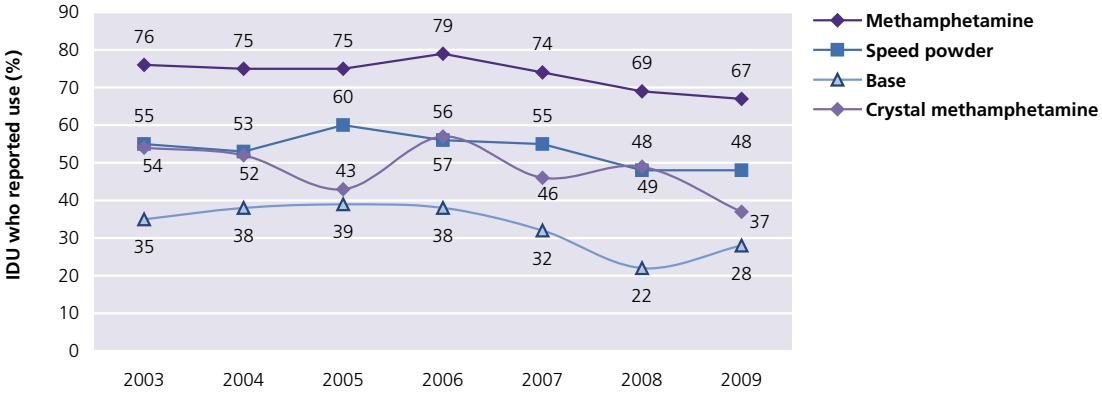
Amphetamine-group substances also remain one of the main problem drugs in New Zealand and Australia. In the two countries, the Drug Use Monitoring in Australia (DUMA) and the New Zealand Arrestee Drug Abuse

33 A series of school surveys were recently undertaken in selected Caribbean countries. Based on the results of these surveys, the annual prevalence among the adult population could be estimated.

34 Centre for Disease Control and Prevention, *Youth Risk Behaviour Surveillance – selected steps communities*, United States, 2007.

Fig. 213: Australia: percentage of injecting drug users who reported use of any form of methamphetamine in the preceding six months, 2003-2009

Source: National Alcohol and Drugs Research Centre, *Australian drug trends 2009: Findings from the Illicit Drug Reporting System (IDRS)* University of New South Wales



Monitoring (NZ-ADAM) programmes measure drug and alcohol use among people who have recently been detained by police. In 2008, 21% of detainees across Australia had tested positive for methamphetamine – although this shows a decline from the previous year (27% in 2007) and the lowest positive test rate for methamphetamine since 1999.[35] Similarly in New Zealand, among the police detainees who were tested for drugs, methamphetamine and amphetamine were the second and third most commonly detected drugs (10% and 9%, respectively).[36] In Australia, the most commonly injected substances were also amphetamines-group substances, where 67% of the injecting drug users interviewed had injected some form of methamphetamine in the preceding six months.[37]

'Ecstasy'-group consumption

Globally, between 10.5 and 25.8 million people were estimated to have used 'ecstasy' group[38] substances (primarily MDMA and its analogues) in the previous year. This range compares with a range of 11.6 - 23.5 million reported for 2007. The highest prevalence of 'ecstasy' use remains in Oceania (3.6%-4%) while in absolute terms, Europe had the highest number of users in 2008, with some 3.9 - 4.1 million people aged 15-64 estimated to have used 'ecstasy' at least once in the previous year. For most parts of Asia as well as Africa, information on 'ecstasy' use is missing, which introduces a high level of uncertainty in the global estimates.

Many countries in Asia report an increase in 'ecstasy' use

In 2008, 56 Member States provided information on experts' perception on trends in 'ecstasy' use. Experts in half of these countries thought that 'ecstasy' use had been stable in 2008, while one third considered that it had increased. Most of the countries/territories reporting an increase were in Asia – in particular Bangladesh, China including Macao, Indonesia, Mongolia, Pakistan and Viet Nam. New estimates provided by Indonesia on the annual prevalence of 'ecstasy' use among the population aged 15-64, however, showed a slight decrease from 0.3% in 2005 to 0.2% in 2008.

Mixed trends for 'ecstasy' use reported in Europe

In Europe the annual prevalence of 'ecstasy' use is estimated at 0.7% of the population aged 15-64. A higher prevalence rate as well as a higher total number of 'ecstasy' users are reported from West and Central Europe as compared to East and South-East Europe. The high prevalence countries remain the Czech Republic, Slovakia, Estonia, the United Kingdom and Latvia, while Romania, Greece and Poland have negligible or quite low 'ecstasy' use. In those countries where data on annual prevalence in the adult population was available for 2008, the picture is mixed. Some registered an increase (the Czech Republic, Denmark, England and Wales, the former Yugoslav Republic of Macedonia and Slovakia) and others a decrease (Estonia, Lithuania and Scotland).

35 Gaffney A., Jones W., Sweeney J. and Payne J., *Drug use Monitoring in Australia: 2008 annual report on drug use among police detainees,* AIC Monitoring Reports 2009.

36 Hales J. and Manser J., *Annual Report 2008, New Zealand Police ADAM,* Health Outcomes International Pvt. Ltd, October 2008.

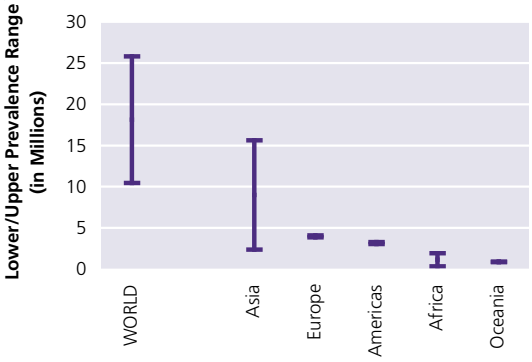
37 National Alcohol and Drugs Research Centre, *Australian drug trends 2009: Findings from the Illicit Drug Reporting System (IDRS),* University of New South Wales.

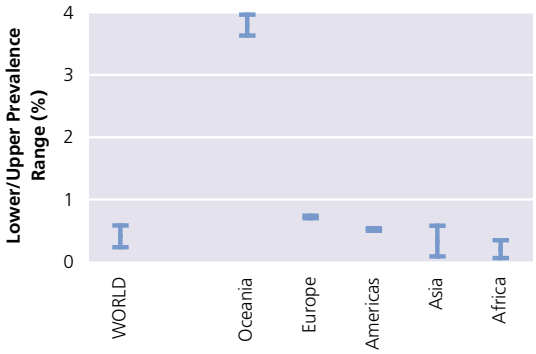
38 Reports show that unbeknown to many 'ecstasy' users, what is sold to them as 'ecstasy' (MDMA) is often a combination of many psychoactive substances, such as methamphetamine and ketamine. *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

Table 29: Estimated number of people who used 'ecstasy' at least once in the past year and prevalence among the population aged 15-64, by region, 2008

Region/ Subregion (Ecstasy-group)	Estimated number of users annually (lower)	-	Estimated number of users annually (upper)	Percent of population age 15-64 (lower)	-	Percent of population age 15-64 (upper)
Africa	350,000	-	1,930,000	0.1	-	0.4
Eastern Africa	Subregional estimate cannot be calculated					
North Africa	Subregional estimate cannot be calculated					
Southern Africa	220,000	-	420,000	0.2	-	0.4
West and Central Africa	Subregional estimate cannot be calculated					
Americas	3,040,000	-	3,280,000	0.5	-	0.5
Caribbean	10,000	-	240,000	0.1	-	0.9
Central America	20,000	-	30,000	0.1	-	0.1
North America	2,490,000	-	2,490,000	0.8	-	0.8
South America	510,000	-	530,000	0.2	-	0.2
Asia	2,370,000	-	15,620,000	0.1	-	0.6
Central Asia	Subregional estimate cannot be calculated					
East/ South-East Asia	1,460,000	-	6,850,000	0.1	-	0.5
Near and Middle East	Subregional estimate cannot be calculated					
South Asia	Subregional estimate cannot be calculated					
Europe	3,850,000	-	4,080,000	0.7	-	0.7
Eastern/ South-East Europe	1,680,000	-	1,890,000	0.6	-	0.6
Western/ Central Europe	2,180,000	-	2,190,000	0.8	-	0.8
Oceania	840,000	-	910,000	3.6	-	4.0
Global	**10,450,000**	**-**	**25,820,000**	**0.2**	**-**	**0.6**

Fig. 214: 'Ecstasy' use: lower and upper ranges of numbers and annual prevalence globally and by region, 2008





Compared to methamphetamine and amphetamine, use of 'ecstasy' is much more common among young adults aged 15-34 (national estimates ranging between 0.1% – 3.1% of past year amphetamine prevalence, compared to 0.2% – 7.7% for 'ecstacy' use). Most of the countries, though, have reported a decreasing or stabilizing trend of 'ecstasy' use among young adults.[39]

The school survey conducted under the European School Survey Project on Alcohol and Other Drugs (ESPAD) and other school surveys conducted in 2007 suggest, overall, little change in the levels of 'ecstasy' use among students aged 15 to 16. Compared to 2003, overall increases in 'ecstasy' use was observed in 12 countries, with Latvia, Bulgaria, Slovakia, Denmark, Hungary and Malta showing marked increases over this period. The Czech Republic, Portugal and Croatia reported substantial decreases, while 'ecstasy' use remained stable in the remaining countries.[40]

39 EMCDDA, *Annual report 2008: the state of the drug problems in Europe*, Lisbon 2008.

40 Hibel B., Adersson B., Bjarnason T., Ahlstrom S., Balakireva O.,

Table 30: National experts' perception of trends in 'ecstasy' use by region, 2008

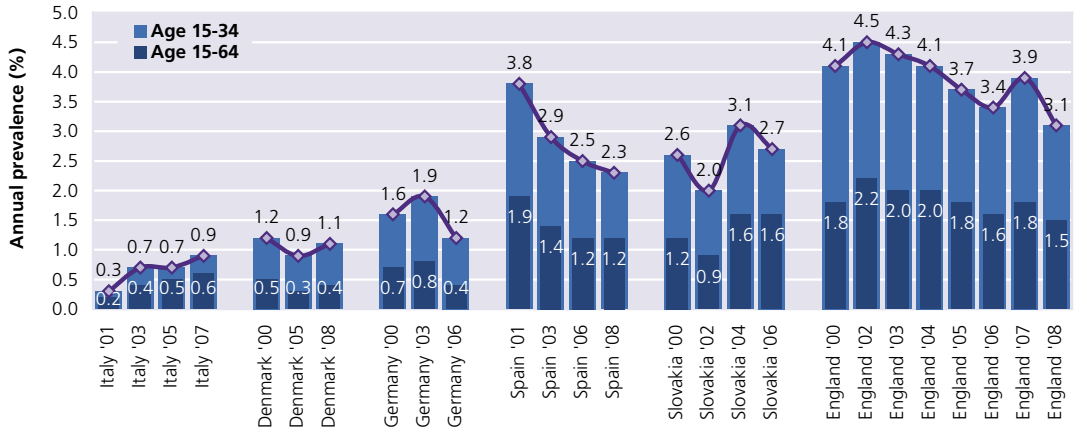
Source: UNODC ARQ

Region	Member States providing perception data	Member States perception response rate	Use problem increased*	Percent use problem increased	Use problem stable	Percent use problem stable	Use problem decreased*	Percent use problem decreased
Africa	4	8%	1	25%	3	75%	0	0%
Americas	12	34%	1	8%	11	92%	0	0%
Asia	15	33%	8	53%	4	27%	3	20%
Europe	24	53%	7	29%	12	50%	5	21%
Oceania	1	7%	1		0		0	
Global	**56**	**29%**	**18**	**32%**	**30**	**54%**	**8**	**14%**

* Identifies increases/ decreases ranging from either some to strong, unweighted by population.

Fig. 215: Trends in annual prevalence of 'ecstasy' use among young adults (aged 15-34)

Source: EMCDDA, *Annual report 2008: the state of the drug problems in Europe,* Lisbon 2008



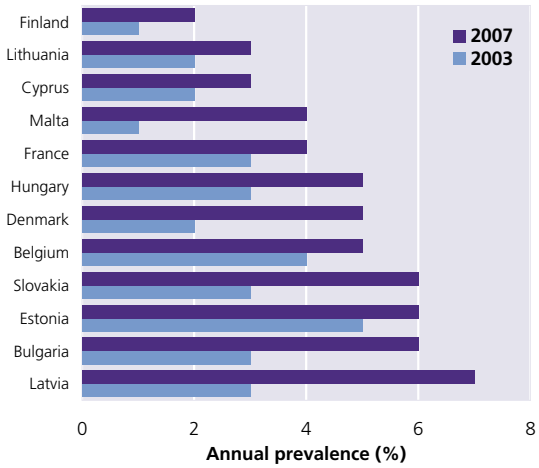
'Ecstasy' use declined in North America after 2001, but there are early signs that it may recover

In the United States, after a decline in the annual prevalence of 'ecstasy' use from 1.3% in 2002 to 0.9% in 2003 among the population aged 12 and older, the trends have remained stable over the past five years.

However, there are signs of a possible resurgence. The annual prevalence of 'ecstasy' use among 10th grade students in the United States fell from 6.2% in 2001 to 2.4% in 2004, and has been increasing since then. The annual prevalence among 8th and 12th grade students, though, remains stable. It is considered that diminishing perceived risks and disapproval among the students in US may cause a rebound in ecstasy use.[41] In Canada, the annual prevalence of 'ecstasy' use has increased from 1.3% in 2004 to 1.7% in 2008.

Fig. 216: European countries with an increase in 'ecstasy' use among students aged 15-16

Source: ESPAD



Kokkevei A. and Morgan M., *The ESPAD Report: Alcohol and other Drug Use Among Students in 35 European countries,* 2003, 2007.

41 National Institute on Drug Abuse *Monitoring the Future, Overview of Key Findings 2008* (Bethesda, Maryland, USA, 2009).

Fig. 217: European countries with a decrease in 'ecstasy' use among students aged 15-16

Source: ESPAD

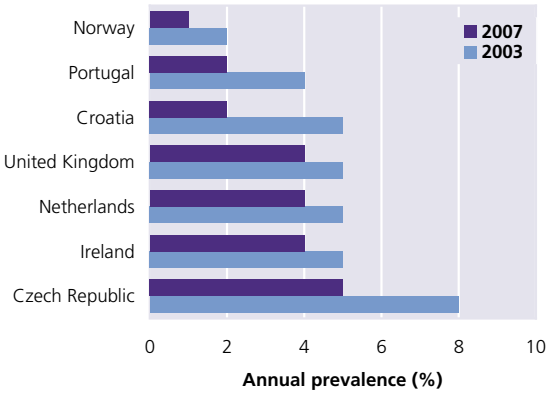


Fig. 219: European countries with stable 'ecstasy' use among students aged 15-16

Source: ESPAD

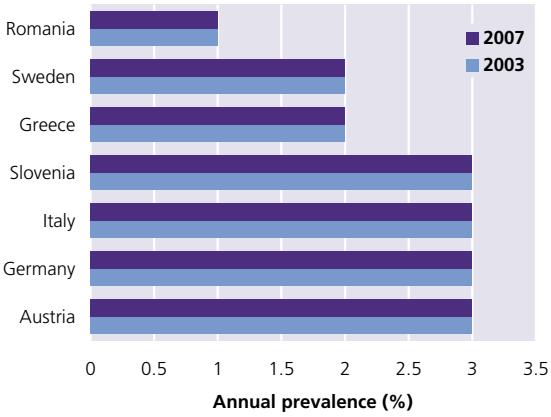


Fig. 218: United States: Trends in the annual prevalence of 'ecstasy' use among the population aged 12 and older, 2002-2008

Source: Substance Abuse and Mental Health Services Administration, *Results from the 2008 National Survey on Drug Use and Health*, US Department of Health and Human Services

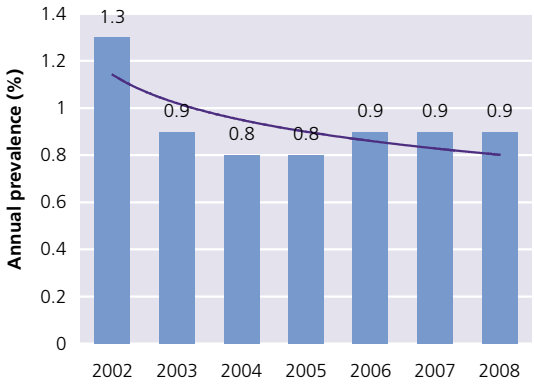
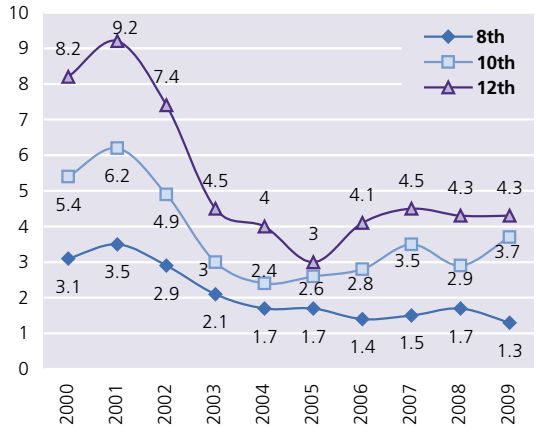


Fig. 220: United States: Long-term trends in annual prevalence of 'ecstasy' use among high school students, 2000-2009

Source: National Institute on Drug Abuse, *Monitoring the Future: Key findings, 2009*



Stabilizing trends of 'ecstasy' use in South America

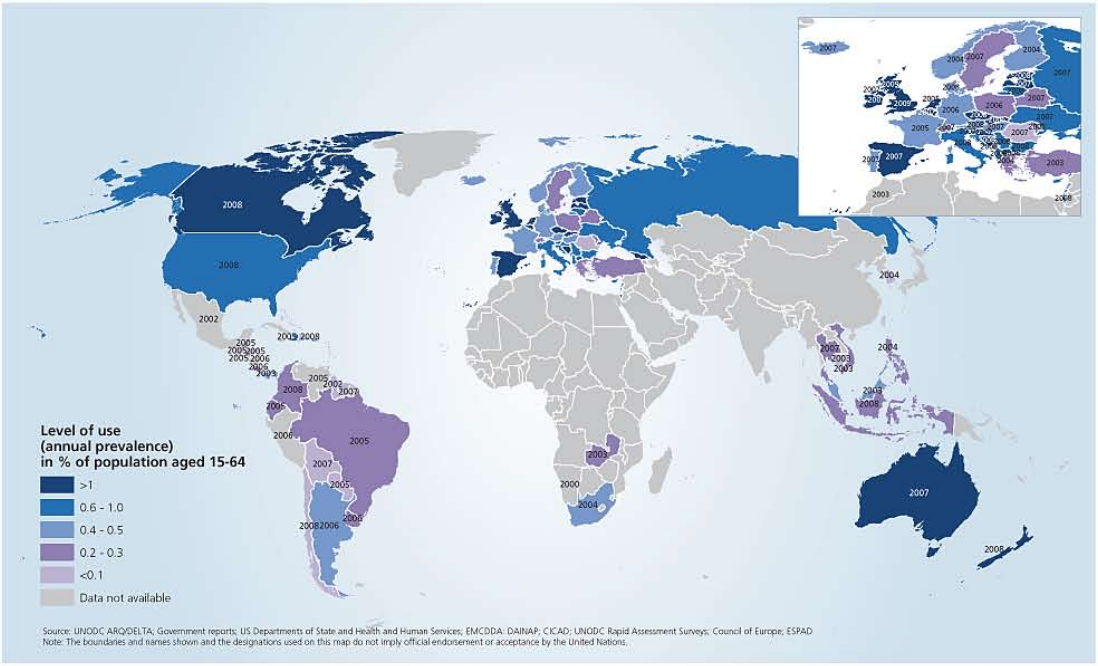
Experts from most countries in South America reported a stable trend in the use of 'ecstasy' in their countries. New data from Colombia show an increase in the adult prevalence rate of 'ecstasy' use (from 0.2% estimated in 2005 to 0.3% estimated in 2008). Estimates for the Bolivarian Republic of Venezuela for 2005 were also revised downward (from 0.2% in 2001 to less than 0.01% in 2005). The annual prevalence in the region remains low compared to North America or Europe.

'Ecstasy' use still high in Oceania, but the quality of 'ecstasy' may vary

The Oceania region reportedly has one of the highest annual prevalence rates of 'ecstasy' use, ranging between 3.6% and 4% of the population aged 15-64. Both Australia and New Zealand have reported high levels of 'ecstasy' use, but the annual prevalence remained unchanged from the previous years (4.2% and 2.6%, respectively). In New Zealand, the extent to which the 'ecstasy' sold in the country contains substances other than MDMA, such as benzylpiperazine (BZP) or ketamine remains unclear.[42]

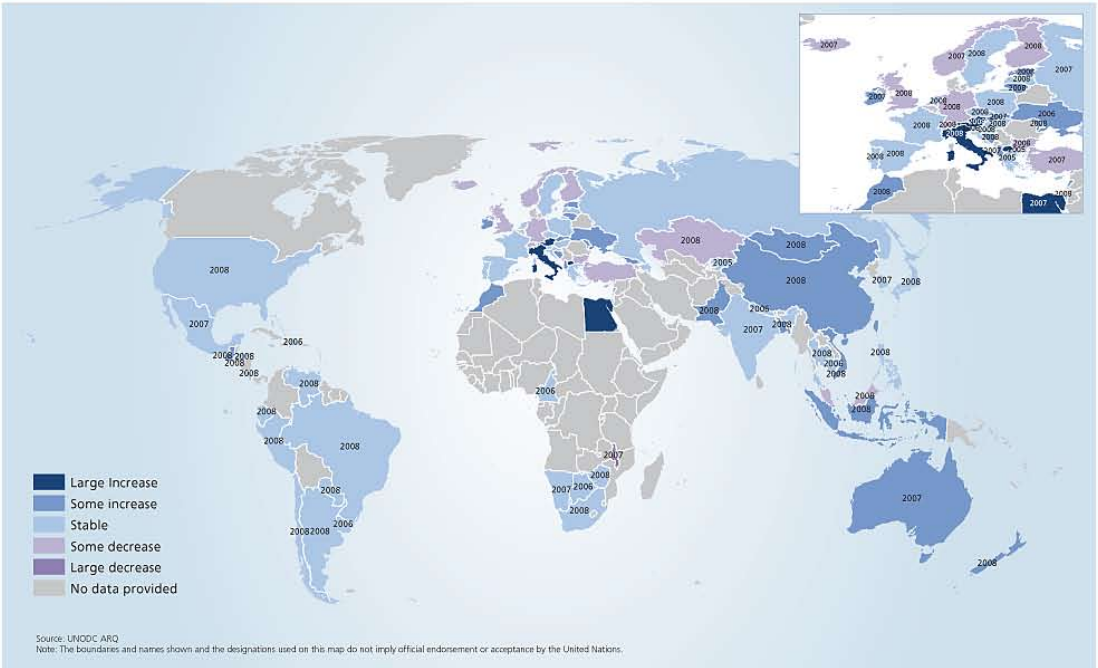
42 Wilkins C., Griffiths R. and Sweetsur P., *Recent Trends in Illegal Drug Use in New Zealand, 2006 – 2008: Findings from the 2006, 2007 and 2008 Illicit Drug Monitoring System (IDMS)*, SHORE, Massey University.

Map 36: Use of ecstasy in 2008 (or latest year available)



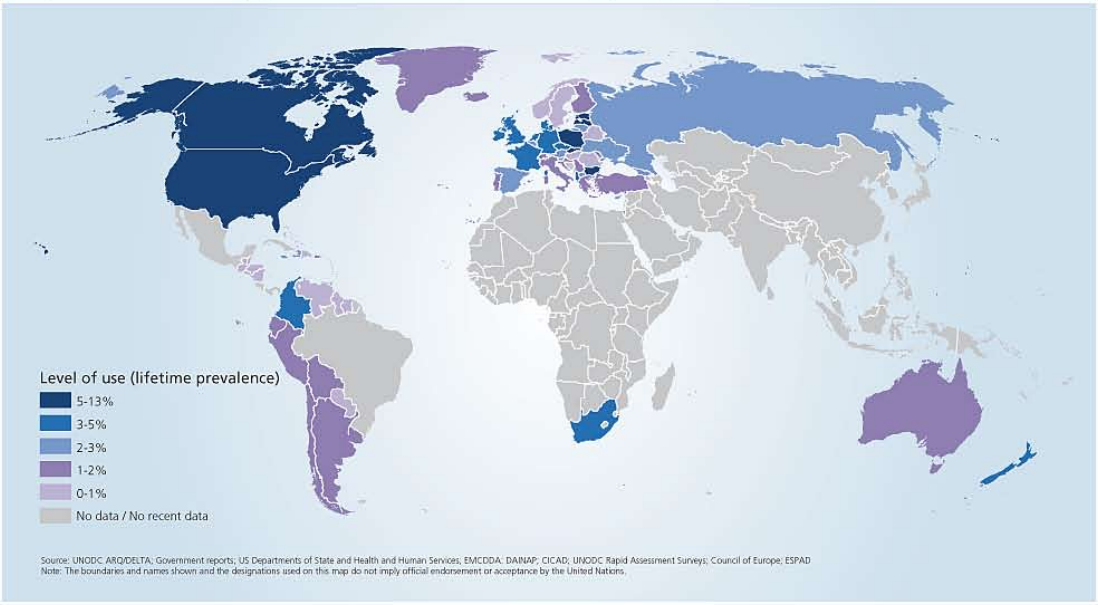
Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA: DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 37: Expert perception of trend changes in the use of ecstasy, 2008 (or latest year available back to 2005)



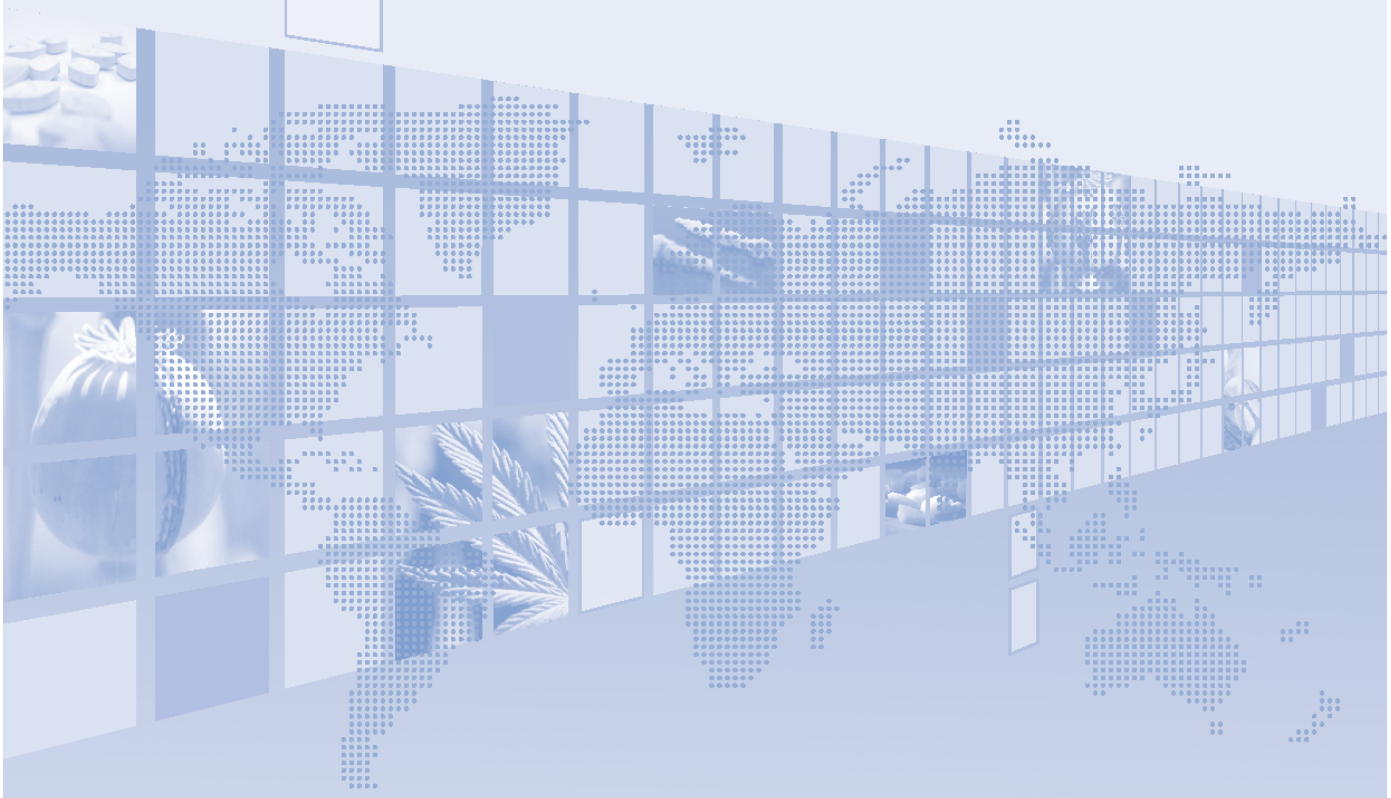
Source: UNODC ARQ
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 38: Prevalence (%) of lifetime ecstasy use among young people



Source: UNODC ARQ/DELTA; Government reports; US Departments of State and Health and Human Services; EMCDDA; DAINAP; CICAD; UNODC Rapid Assessment Surveys; Council of Europe; ESPAD
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

3. The destabilizing influence of drug trafficking on transit countries: The case of cocaine



3.0 The destabilizing influence of drug trafficking on transit countries: The case of cocaine

In the past decade, the United Nations has come to recognize the relationship between political instability and organized crime, particularly drug trafficking. The United Nations Convention against Transnational Organized Crime came into effect in late 2003. In 2004, the High-level Panel on Threats, Challenges and Change argued:

> *One of the core activities of organized criminal groups - drug trafficking – has major security implications… In some regions, the huge profits generated through this activity even rivals some countries' GDP, thus threatening State authority, economic development and the rule of law.*[1]

This report was followed by the Secretary-General's report *In Larger Freedom*, which concludes:

> *Organized crime contributes to State weakness, impedes economic growth, fuels many civil wars, regularly undermines United Nations peacebuilding efforts and provides financing mechanisms to terrorist groups.*[2]

More recently, in December 2009, the Security Council issued a Presidential Statement on Peace and Security in Africa, which urged the Secretary-General to consider:

> *…mainstreaming the issue of drug trafficking as a factor in conflict prevention strategies, conflict analysis, integrated missions' assessment and planning and peacebuilding support.*[3]

Taking up this challenge, Secretary-General Ban Ki-moon, speaking at the African Union summit in January 2010, concluded, "Drug trafficking is … a rising threat to international peace and security in Africa."[4] And in February 2010, the Security Council noted with concern "the serious threats posed in some cases by drug trafficking and transnational organized crime to international security in different regions of the world."[5]

1 High-level Panel on Threats, Challenges and Change, *A more secure world: Our shared responsibility.* United Nations, 2004, p.53.

2 Report of the Secretary-General, *In larger freedom: towards development, security and human rights for all.* United Nations General Assembly, Fifty-ninth session (A/59/2005), 21 March 2005, p. 27.

3 S/PRST/2009/32.

4 Secretary-General Ban Ki-moon, Remarks to the Summit of the African Union – "An Agenda for Prosperity and Peace," Addis Ababa, 31 January 2010.

5 S/PRST/2010/4.

Two types of impact

What is behind these assertions? How, exactly, can drug trafficking pose a threat to stability? There are at least two ways. The first involves countries where insurgents and illegal armed groups draw funds from taxing, or even managing, drug production and trafficking. The second concerns countries that do not do not face such a situation, but where the drug traffickers become powerful enough to take on the state through violent confrontation, high-level corruption, or (usually) both.

Not every country is equally vulnerable to this threat. Drug trafficking is problematic for any country it touches, but it can become particularly destabilizing where there are pre-existing governance issues. The small size of the local economy relative to the value of the drug flow, as the High-level Panel suggested, is also relevant. The two are often related: governments in countries with small economies may have trouble asserting authority over their sovereign territory or developing remote areas of the country; prolonged instability can also keep economies from growing. This is why the focus has increasingly been on Africa, a continent where there are many poor and unstable countries, but where, for a variety of reasons, the worst effects of drug trafficking have not yet been experienced. When drug routes pass though African soil, like the recent flow of cocaine though West Africa, the international community is rightly concerned.

Of course, drug trafficking is not unique in this respect. The money gained through all forms of organized crime can cause trouble, and smuggling of contraband (such as cigarettes, diamonds, timber or oil) has been a mainstay of rebel financing for decades. But the drug markets are simply worth more money than those of other contraband goods, and since they are illicit, drugs remain unambiguously the domain of organized criminals.

It is also true that certain types of drugs are more relevant than others. Cannabis and synthetic drugs are produced almost everywhere, so there is limited need for trans-regional trafficking. Cannabis has been suggested as a source of funding for rebel movements in regions as diverse as Casamance (Senegal), Aceh (Indonesia) and southern Nepal. Methamphetamine has been key to funding the ethnic militias in Myanmar. But the most lucrative drug flows originate in poor and unstable areas and end in the richest nations on earth. Cocaine and

heroin are strongly associated with specific sources of supply in poor areas and specific rich consumer countries. The value of these flows and the concentration of production and trafficking intensifies the destabilizing effect.

Almost all the world's heroin and the vast bulk of the world's cocaine is produced in countries that have experienced insurgency problems. While both opium poppy and coca bush are optimally productive under particular climatic conditions, they could be grown in a much wider range of countries than is currently the case (and they have been, historically). The production of these drugs is reliant on crops that require large cultivation areas, however, and the international control system has compelled national governments to take strong action against any such cultivation that occurs within their borders. As a result, wide-scale cocaine or heroin production is only possible in countries where there are stretches of rural area that the state is struggling to fully service and control. These conditions also happen to favour the growth of guerrilla armies.

In the absence of the sort of outside funding found during the Cold War, insurgents and illegal armed groups are often compelled to derive their sustenance from the regions they dominate, and these unstable areas are often already enmeshed in drug trafficking. The money associated with organized crime can be so great that militants may forget about their grievances and focus on satisfying their greed. Even where this is not true, drugs pay for bullets and provide a lifestyle to combatants that makes them less likely to come to the negotiating table. It becomes entirely feasible to make a career out of militancy, and this prolongs civil conflict.

The best examples of this phenomenon are the primary cultivation areas for opium poppy, the crop from which heroin is derived: Afghanistan and Myanmar. In both countries, rebel armies are at least partly funded by the drug trade. Large-scale opium poppy cultivation requires large land areas, and is a highly labour-intensive activity. To generate the heroin needed to satisfy global demand, thousands of hectares and hundreds of thousands of workers must be employed without state interference, and the best deterrent for state interference with this process is a rebel army. Without an active conflict, heroin production can be eliminated, as has been done in a series of countries where insurgency was either absent or had less territorial control, including Turkey, the Islamic Republic of Iran, Pakistan, Thailand, the Lao People's Democratic Republic, China and Lebanon.

Today, heroin production is strongly associated with insurgent activity: in 2009, Afghanistan was responsible for 90% of global opium production, and 99% of all opium produced there came from just seven provinces in southern and western Afghanistan, where the rebel groups are strongest. But the insurgents do not control the trafficking activity. Forces aligned to the Taliban garnered at least an estimated US$125 million per year through taxation of cultivation, production and trafficking.[6] This is about 7% of the value of the trade in Afghanistan. While the drug trade provides some funds for the conflict, more significant is the cover the conflict provides for the drug trade. Those who profit most from heroin trafficking are professional criminals and their network of corrupt officials.

Conflict zones are not the only places where transnational organized crime can pose a threat to the state, however. There are a number of areas around the world where criminals have become so powerful that, rather than seeking to evade the government, they begin to directly confront it (though violence) or usurp it (through high-level corruption). The ideal case for traffickers is an authoritarian state where the authority is in their pocket. Under these circumstances, there is little violence and the trafficking may remain completely invisible at the national level, only becoming exposed when international evidence is brought to bear. Democracies are typically more challenging, requiring both violence and corruption to achieve the traffickers' objectives.

The violence can assume many forms. Investigators, prosecutors and judges who pursue organized criminals are threatened and killed. Journalists and activists may also be targeted. Portions of the country may effectively drift beyond state control, particularly those that were under-served by the state in the first place. The effect can be very similar to an insurgency, but the two phenomena remain distinct, for reasons discussed below.

Efforts to stop trafficking can temporarily exacerbate this violence, particularly where the groups involved have begun to command trafficking turf and achieved some sort of an institutional identity of their own. Under pressure, groups may inform on one another, using the state enforcement apparatus to achieve their commercial objectives and divert attention from themselves. This typically results in reprisal attacks. Decapitating trafficking groups can trigger succession struggles and the fragmented organizations that result can become prey for rivals. Organized crime becomes disorganized, releasing violence as the structures decompose. This violence can fuel public demands that enforcement be suspended, but this difficult period must be weathered. The smaller groups that result will no longer have the same capacity to challenge the state, and the violence will ultimately decline.

Violence is a visible manifestation of states under stress, but even more damaging is the insidious effect of corruption. Most traffickers seek to pay local officials to

6 It is estimated that the Taliban pocketed around $350-650 million from the opiate trade between 2005 and 2008 through direct taxation of farmers and traffickers, see *Addiction, crime and insurgency: the transnational threat of Afghan opium*, Vienna: UNODC, 2009, p. 111.

look the other way. Destabilization is only really a threat when the corruption reaches the top, and those charged with stopping the trafficking begin to actively promote it. This can cause the entire law enforcement mechanism to seize up, as authorities become paralysed by mistrust. The effect on public confidence in government can be devastating, and democratic governments that seek to expose the rot may be penalized at the polls. All the incentives are in place for a downward spiral in governance that can be extremely challenging to reverse.

Organized criminals generally do not seek to topple the state. They mostly want to be left alone to pursue their illicit profits. But they can provoke a reaction that can also threaten long-term prospects for democratic stability. A clear sign that crime has become a national security threat comes when exceptional legal and security measures are taken, including calling on the military to help re-establish the government's authority. It is sometimes necessary for states to, in effect, reacquire territory lost to criminal groups, and, in some countries, the military is both more disciplined and less corrupt than the civilian police. In a world where international conflicts are becoming less common, using the armed forces to promote internal stability may be seen as cost effective.

Such a move may have popular support in countries where people fear for their safety and are frustrated with the appearance of impunity. This must remain an option of last resort, however: the long-term use of regular military forces to police civilian populations presents risks for the rule of law and civil liberties. Particularly in countries where the military has played an important role in past authoritarian regimes, putting soldiers on the streets can be the first phase in a long-term roll-back of democratic values.

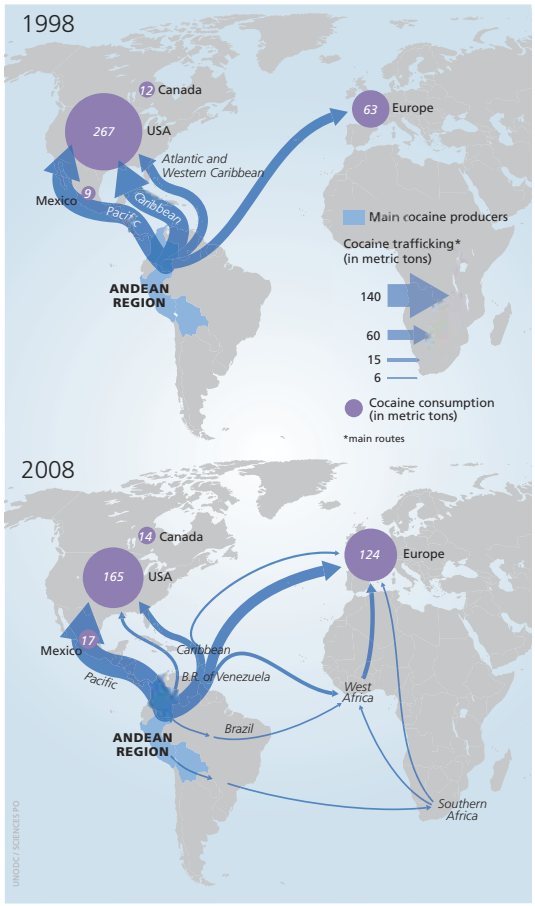
Growing popular discontent with the slow pace of civilian enforcement may also trigger a less formal erosion of civic values and the rule of law. Military and police officials may become frustrated with a corrupt or ineffective criminal justice system and begin to engage in extrajudicial executions. The public may form civilian "self-protection" groups as well, and these groups may even attract state recognition and support.

Civilian patrols are the normal reaction of citizens who feel they cannot rely on the state to protect them, but they can become the basis for something more sinister. Initially, volunteers may receive ad hoc contributions from the people and businesses they protect, but over time these fees may become mandatory. In unstable areas, a neighbourhood watch can become a protection racket, and, once its absolute authority is established, it can even become a predatory gang. Over time, these paramilitary vigilantes can become as big a security challenge as the criminals they were formed to combat.

These effects can be seen, to some extent, in many

Map 1: Global cocaine flows, 1998 and 2008

Source: UNODC *Word Drug Report*, 2009 and UNODC calculations, informed by US ONDCP, Cocaine Consumption Estimates Methodology, September 2008 (internal paper)



countries where cocaine trafficking is an issue. Of the countries with the highest murder rates in the world today, almost all lie along the key cocaine trafficking routes.

In the past, nearly all of the cocaine produced in the Andean region was consumed in the United States of America, but this has changed. The value of the cocaine market has fallen dramatically in the United States in the last decade, while it has grown remarkably in Europe and the Southern Cone of South America. Today, cocaine flows into three main destination markets: the United States (responsible for about 40% of the cocaine consumed in 2008), Europe (about 25%), and the Southern Cone of South America (10%-20%). Of course, the trafficking routes are also dynamic. Increasingly, transit countries are used, including the Bolivarian Republic of Venezuela and Ecuador. In the 1970s and 1980s, the Caribbean was the primary conduit for South American drugs destined for the United States; today, it

is Central America. Transit routes to Europe have also shifted, recently including West Africa as a conduit.

3.1 Transit countries in South America

Traditionally, most of the cocaine departing Colombia left the country directly, by sea or by air, through the Gulf of Mexico or the Pacific. But increased interdiction, combined with changes in market demand, has increased the importance of transit countries, particularly the Bolivarian Republic of Venezuela, Ecuador and Brazil.

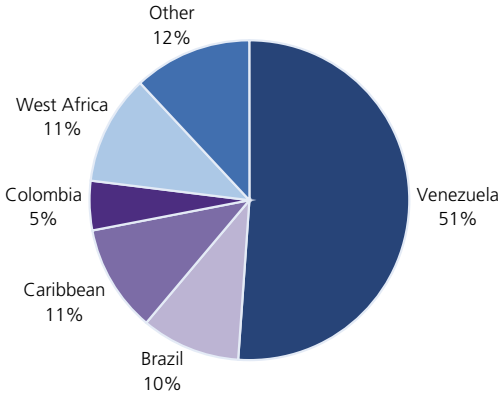
The drug trafficking situation in the Bolivarian Republic of Venezuela appears to be deteriorating. In 2008, the Bolivarian Republic of Venezuela was fourth in the world in annual cocaine seizures (34 mt), ahead of Peru and the Plurinational State of Bolivia. According to the new Maritime Analysis Operation Centre (MAOC-N), more than half of all intercepted shipments in the Atlantic (67 incidents between 2006 and 2008) started their journey in the Bolivarian Republic of Venezuela. Direct shipments from Colombia, in contrast, accounted for just 5%.[7] In addition, many undocumented air flights leave the country, and all the clandestine air shipments of cocaine detected in West Africa appear to have originated in the Bolivarian Republic of Venezuela. The country also appears to be the source of cocaine flown to clandestine airstrips in Honduras, with devastating effects there (discussed below).

At the same time, the Bolivarian Republic of Venezuela seems to be experiencing a remarkable upturn in criminal violence. This trend is difficult to track because the Venezuelan Government stopped publishing official crime statistics after 2003, but some institutions continue to monitor the issue.[8]

The murder rate in the Bolivarian Republic of Venezuela has increased markedly since the end of the Cold War, but especially since the late 1990s. There may be many reasons for this, but it happens to have occurred just as Colombian illegal armed groups' involvement in the cocaine trade began to pick up. There was a brief drop after 2003, when Colombia began to reduce the size of the illegal armed groups, followed by a resurgence afterwards. Today, there are eight times as many murders as there were two decades ago, and the murder rate per 100,000 population appears to be in the low 60s, among the highest in the world. Kidnappings also appear to have greatly increased, with the areas bordering Colombia being among the worst affected.

Fig. 1: Departure locations of identified drug trafficking shipments by sea from South America to Europe, 2006-2008

Source: Maritime Analysis Operation Centre



There are other reasons to be concerned about the potential impact of cocaine trafficking on Venezuelan stability, including parallels to the Colombian situation. The Bolivarian Republic of Venezuela has had insurgent groups, such as the Bolivarian Liberation Front, which are very similar to the FARC. These groups have effectively been co-opted by the Government, but maintain armed cells, including some along the borders with Colombia, Ecuador and Brazil. The Government has also begun arming and supporting civilian militias (the 'national reserve'). Experience in other countries has shown that such a move can fuel organized crime.

Ecuador has long been used by traffickers as a secondary corridor for cocaine trafficked through the Pacific, and this problem has grown as the importance of the Pacific maritime corridor has grown. The role of the FARC in Colombian trafficking through Ecuador has also increased in importance. The FARC's forty-eighth front, situated along the border with Ecuador, is regarded as being central to the illegal armed groups' cocaine trafficking operations.

Ecuador's murder rate has been rising for a number of years. Ecuador is unusual in that the murder rate in the largest city (Quito) is generally less than the national average. In 1990, the highest provincial murder rate in Ecuador was in Los Rios, a poor province in the centre of the country. By 1995, the highest murder rate was found in Esmeraldas, a richer coastal province bordering Colombia, known for its use by drug traffickers. Esmeraldas is the one province of the country where small

7 Maritime Analysis Operation Centre (MAOC(N), *Statistical Analysis Report*, Lisbon 2009.

8 Such as the Observatorio Venezolano de Violencia at the Universidad Central de Venezuela.

9 Briceño-León, R., "Diez años de Violencia en Venezuela" (and subsequent reports) See: http://www.alertavenezuela.com/documentos/getbindata.php?docid=137&fieldname=documento and http://informe21.com/actualidad/impunidad-corrupcion-16047-homicidios-nuestro-pais-2009-segun-informe

Fig. 2: Murder count in the Bolivarian Republic of Venezuela, 1990-2009

Source: Observatorio Venezolano de Violencia[24]

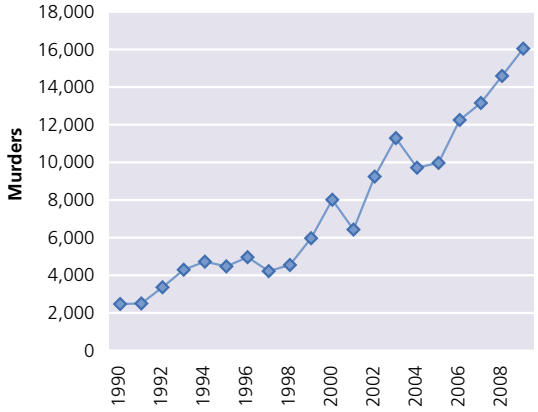
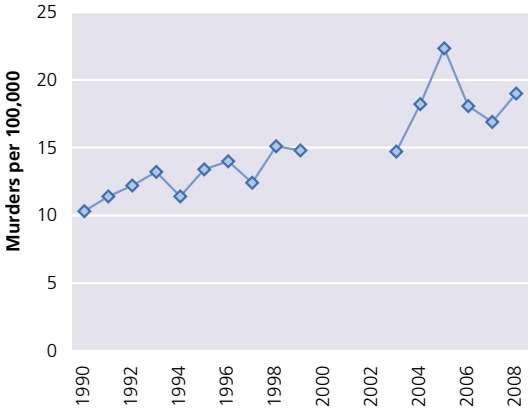


Fig. 3: Murders per 100,000 citizens in Ecuador, 1990-2008

Source: IADB, UNODC CTS



scale coca cultivation has been detected. By 1999, the murder rate in Esmeraldas was more than twice the national average, at 34 per 100,000,[10] comparable to Colombia today.

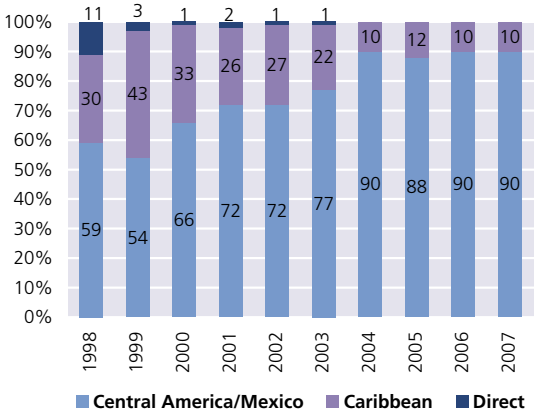
3.2 Transit countries in the Caribbean

As a conduit for cocaine imported into the United States, the Caribbean has greatly diminished in importance over the past 15 years. During the early days of the trade, traffickers preferred the Caribbean corridor and it was used preferentially from the late 1970s.[11] In the 1980s, most of the cocaine entering the United States came through the Caribbean into the southern part of the state of Florida.[12] But interdiction successes, tied to the use of radars, caused the traffickers to reassess their routes. As a growing share of cocaine transited the southwest border of the United States, Mexican groups wrested control from their Colombian suppliers, further directing the flow through Central America and Mexico.

Unfortunately, this decline has not necessarily led to increased stability or lowered violence in the transit countries. On the contrary, it seems that once the drug is introduced, instability in the market can drive violence. Jamaica provides a case in point. Estimates of the cocaine flow through Jamaica dropped from 11% of the

Fig. 4: Distribution of cocaine flows to the US market, 1998-2007

Source: National Drug Intelligence Center



US supply in 2000[13] to 2% in 2005,[14] and 1% in 2007.[15] This is reflected in declining seizures in Jamaica and declining arrests and convictions of Jamaican drug traffickers in the United States.[16] It is also negatively reflected in the murder rate, which rose from 34 per 100,000 in 2000 to 59 per 100,000 in 2008.

10 Interamerican Development Bank, "Magnitud y Tendencias de la Violencia en Ecuador, 1990-1999" in *Violencia y seguridad ciudadana*. Quito: IADB, 2001.

11 Statement of James Milford, Acting Deputy Administrator, United States Drug Enforcement Administration, before the Senate Subcommittee on National Security, International Affairs, and Criminal Justice, 17 July 1997.

12 Statement of Thomas A. Constantine, head of the United States Drug Enforcement Administration, before the House of Representatives Judiciary Committee, Subcommittee on Crime, 3 April 1997.

13 Statement of the Donnie Marshall, Administrator, US Drug Enforcement Administration before the United States Senate Caucus on International Narcotics Control, 15 May 2001.

14 National Drug Intelligence Centre, *National Drug Threat Assessment 2006*. Washington, D.C.: Department of Justice, 2006. National Drug Intelligence Centre, *National Drug Threat Assessment 2007* Washington, D.C.: Department of Justice, 2007.

15 National Drug Intelligence Centre, *National Drug Threat Assessment 2009*. Washington, D.C.: Department of Justice, 2009.

16 In 2000, the US federal authorities convicted 79 Jamaicans for cocaine trafficking. In 2008, they arrested just 35.

Fig. 5: Cocaine seizures and murder rates in Jamaica, 2000-2008

Source: UNODC

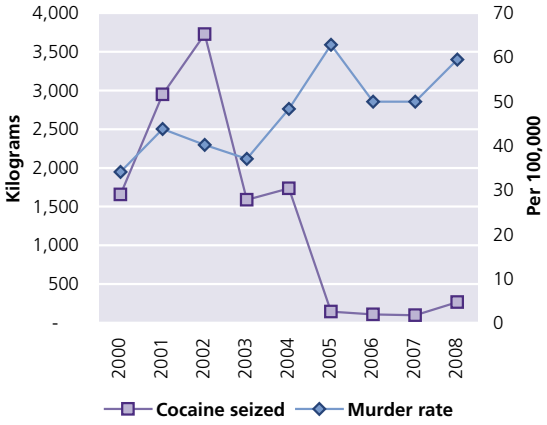
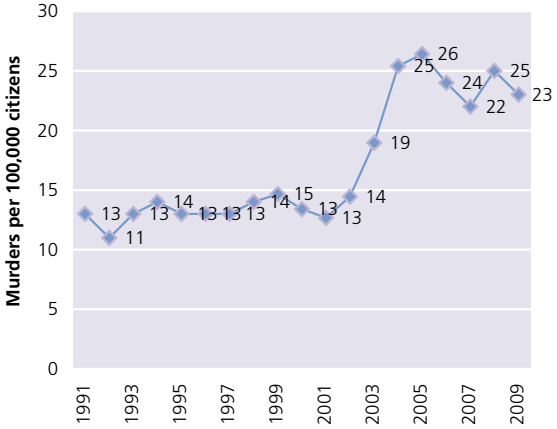


Fig. 6: Murder rates in the Dominican Republic, 1991-2009

Source: UNODC International Homicide Database

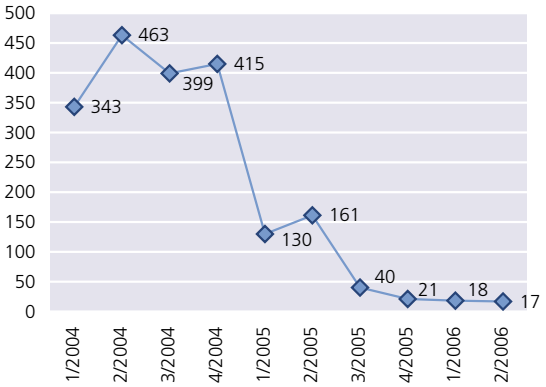


There are historical reasons for this paradoxical effect. The importance of Jamaica as a transit country in the cocaine trade really rose after the violent 1980 elections in that country. A large number of important crime figures (including some so-called 'area dons' and their enforcers) left Jamaica for New York, where they became key suppliers in the crack cocaine boom. This period of growing criminal opportunities represented a time of relative calm in Jamaica. When this market died out and cocaine flows began to shift westward, these men returned to Jamaica to find a much less well organized crime scene, where 'neighbourhood dons' had turned to more direct means of income generation: violent acquisitive crime, including extortion and robbery. The Jamaican cocaine trade suffered another blow when cooperative efforts between Jamaican law enforcement and the United Kingdom sharply reduced the air courier traffic to Europe around 2002. Street-level competition for diminishing returns has fuelled growing homicide rates; the highest in the Caribbean and among the highest in the world.

A similar, but more compressed, effect could also have occurred in the Dominican Republic. The share of the US cocaine supply that transited Hispaniola dropped from 8% in 2000[17] to 2% in 2004, before rising again to 4% in 2005 and 9% in 2007.[18] Around this time, the murder rate in the Dominican Republic doubled, from 13 per 100,000 in 2001 to 26 per 100,000 in 2005. It has remained at high levels, and the drug trade in the Dominican Republic is still volatile. Dominican traf-

Fig. 7: Couriers detected arriving at Schiphol from Curaçao, by quarter, 2004-mid-2006[38]

Source: Netherlands Ministry of Justice



fickers have grown in importance in Europe since about 2005, and today are second only to the Colombians among foreign cocaine traffickers arrested in Spain, the primary point of entry.

Another shift that may have affected local stability is the reduction in air courier traffic though the Netherlands Antilles. In 2000, 4.3 mt of cocaine were seized at Schiphol airport in the Netherlands,[19] much of it originating from the Bolivarian Republic of Venezuela, via the Netherlands Antilles. A '100% control' strategy was introduced at the end of 2003,[20] targeting the drugs

17 International Crisis Group, *Spoiling security in Haiti*, Latin America/Caribbean Report No 13. Brussels: International Crisis Group, 2005.

18 National Drug Intelligence Centre, *National Drug Threat Assessment 2006*. Washington, D.C.: Department of Justice, 2006. National Drug Intelligence Centre, *National Drug Threat Assessment 2007* Washington, D.C.: Department of Justice, 2007.

19 INCB, *Annual Report of the International Narcotics Control Board*, Vienna: INCB, 2001.

20 National Ombudsman, *100%-controles op Schiphol: Over bolletjesslikkers en onschuldige slikverdachten*. The Hague: Office of the National Ombudsman, 27 June 2006.

Fig. 8: Murders and cocaine seizures in Trinidad and Tobago, 1992-2005

Source: UNODC International Homicide Database

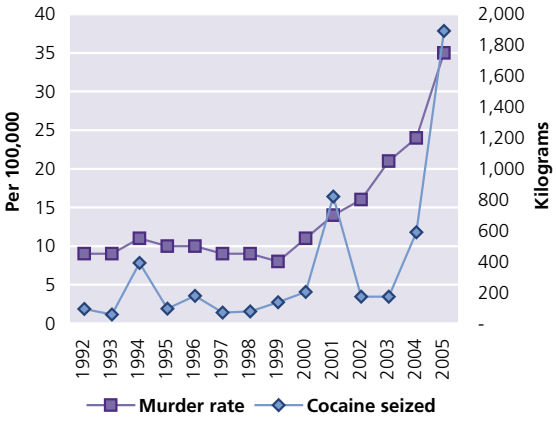
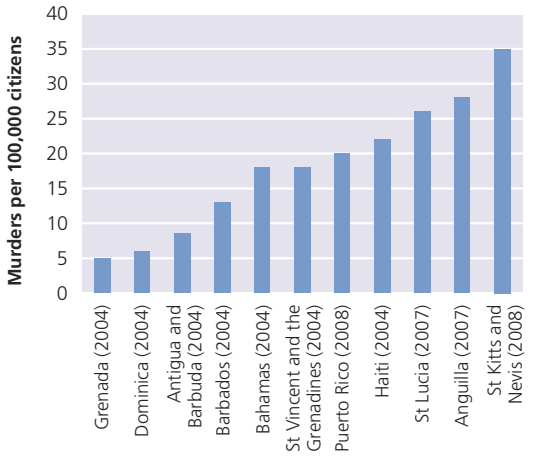


Fig. 9: Caribbean murder rates (most recent data available)

Source: UNODC International Homicide Database



rather than the couriers.[21] As a result, this flow was almost entirely eliminated by 2006.

These interventions may have displaced some of the flow coming from the Bolivarian Republic of Venezuela through the Caribbean to Trinidad and Tobago, which saw a remarkable surge in seizures from 2000 to 2005. At the same time, that country's murder rate tripled. Seizures have declined today, but the murder rate has remained high: 40 per 100,000 in 2008.

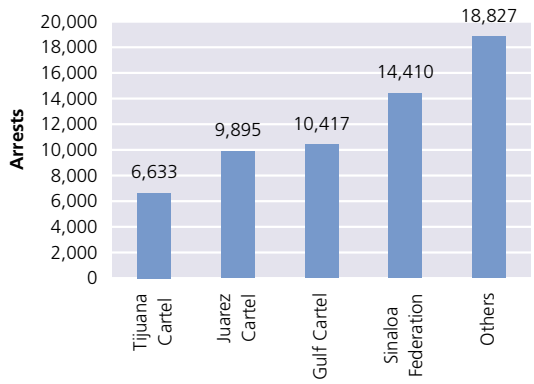
In addition, a number of other Caribbean countries have very high murder rates that are difficult to explain except in terms of the drug trade, particularly given relatively low rates in neighbouring countries.[23]

3.3 Transit countries in Mesoamerica

As Mexican traffickers wrested control of the most valuable portions of the trafficking chain from the Colombians, Mexico itself has become by far the most important conduit for cocaine entering the United States. Today, some 200 mt of cocaine transits Central America and Mexico annually, bringing some US$6 billion to the regional 'cartels'. As a result, those who control the portions of the Mexican border through which the bulk of the drug passes have gained wealth and power comparable to that commanded by the Colombian cartels in their heyday. These groups command manpower and weaponry sufficient to challenge the state when threatened, including access to military arms and explosives.

Fig. 10: Cartel members and others arrested for offences against public safety (drug charges) between 1 December 2006 and 15 February 2009

Source: Attorney General of Mexico



They also have the funds to sow widespread and high-level corruption.

Fortunately, the Mexican Government has several advantages the Colombian Government did not have, including much greater resources. Further, the violence, while formidable in some areas, comes nowhere close to that experienced in Colombia, even when comparing the two countries today. It is highly likely that law enforcement pressure will have a similar effect in Mexico as in Colombia, and the cartels, however powerful, will be dismantled. And, unlike Colombia, there are no comparable illegal armed groups around to pick up the pieces afterwards.

Over 40,000 drug 'cartel' members have been arrested in Mexico in recent years, including many of the heads of

21 Europol, *European Union Situation Report on Drug Production and Drug Trafficking 2003 – 2004*, The Hague: Europol, 2005, p. 4.

22 The final quarter (2/2006) is short by two weeks, as current data only extends to week 24 of 2006.

23 Due to their small population size, murder rates in the smaller islands tend to be highly volatile, so trend data are not presented. Some of these rates were higher in the recent past.

Fig. 11: Number of homicides in Mexico (public health data), 1990-2008

Source: Instituto Nacional de Estadística y Geografía[40]

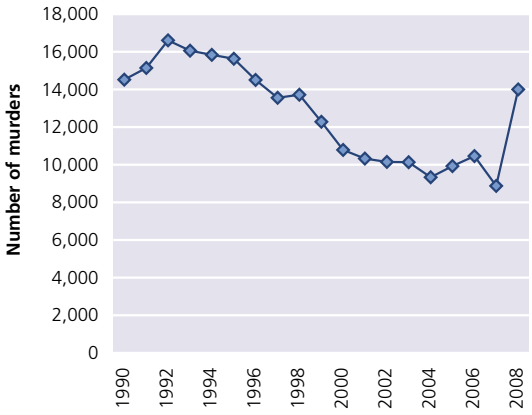
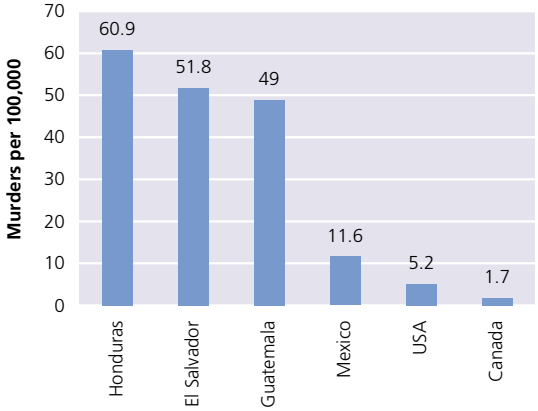


Fig. 12: Comparative regional murder rates in 2008, selected countries in the Americas

Source: UNODC International Homicide Statistics



these organizations. In 2009, 107 criminals were extradited from Mexico to the United States, including key cartel figures, a technique that was pivotal in bringing down the big cartels in Colombia. Decapitating the Mexican cartels has spurred intra- and inter-cartel violence, as the survivors jockey for position and try to take advantage of rival weaknesses. The murder count has shot up, but the rate (about 12 per 100,000 in 2008) remains relatively low, and is about the same as in the mid-1990s. Most of the victims appear to be cartel members, and this violence has further reduced the cocaine supply to the United States, creating a downward spiral from which the cartels will have difficulty escaping.

In Mexico, the cocaine trade is now dominated by a number of these cartels who compete to control border crossings and transportation routes. The leadership, turf and structure of these groups has shifted over time as conflicts both within and between the cartels, as well as enforcement efforts, force realignments. As of early 2010, the dominant cartels were the following:

- **The Sinaloa Federation**, led by billionaire, and Mexico's most wanted man, Joaquin "El Chapo" Guzman;
- **The Gulf Cartel**, once the most powerful criminal organization in Mexico, now greatly weakened by the defection of Los Zetas;
- **Los Zetas**, founded when a group of special forces soldiers defected to the Gulf Cartel and now operating as a trafficking organization in its own right;
- **The Juarez Cartel**, also know as the Carrillo Fuentes Organization, which is struggling to maintain control over its plaza (smuggling turf) in Ciudad Juarez, the city most affected by cartel violence;
- **The Tijuana Cartel**, also known as the Arellano Felix Organization, which is similarly struggling to maintain control over the Tijuana plaza;
- **The Beltran Leyva Organization**, a breakaway from the Sinaloa cartel, now weakened by the recent arrests or killings of three of the five Beltran Leyva brothers; and
- **La Familia Michoacana**, a Zetas breakaway based in Michoacan but expanding, renowned for its penchant for beheadings, quasi-religious ideology and domination of methamphetamine production.

Perhaps due to the recent slump in the cocaine trade, these groups are progressively engaging in a number of other organized crime activities, including migrant smuggling, kidnapping and extortion – all crimes that were prevalent in Mexico before cartel involvement. La Familia, which espouses a bizarre ideology combining aspects of evangelical Christianity with revolutionary populism, provides the most extreme example, 'taxing' businesses in the areas they control and engaging in very public displays of violence to soften resistance.

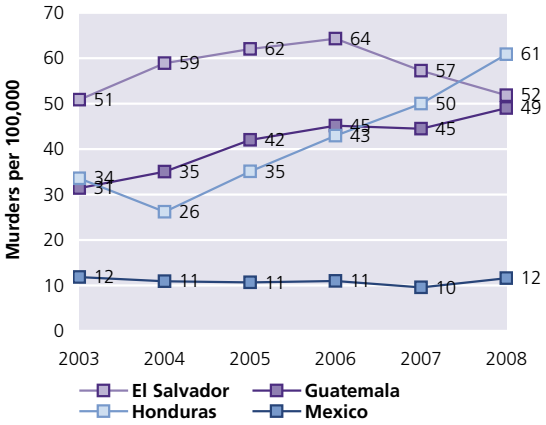
The most violent city in Mexico has been the plaza of Juaréz, where murder rates are among the highest in the region. As in Jamaica, murders in Juaréz increased when the enhanced security presence stopped the flow of cocaine through the city. Street gang members who had been stringing for the cartels found themselves without an income, and resorted to violent acquisitive crime.

Mexico's struggle has attracted a lot of attention, with much less falling on an area far more threatened: Central America. As maritime interdiction has increased and Mexico itself has become far more contested, a growing

24 Online database of the Mexican National Institute of Statistics and Geography (see: http://www.inegi.org.mx/est/contenidos/espanol/proyectos/continuas/vitales/bd/mortalidad/MortalidadGeneral.asp?s=est&c=11144).

Fig. 13: Murder rate trends in Mesoamerica (per 100,000 inhabitants), 2003-2008

Source: UNODC International Homicide Statistics



share of cocaine headed northward is passing through northern Central America, including El Salvador, Honduras, Guatemala and Belize. The murder rates in these four countries are three to five times higher than in Mexico, and both the economy and the state are far less robust and resilient.

The Northern Triangle of Central America is still reeling from the brutal civil wars in Guatemala (1960-1996) and El Salvador (1980-1992). The region suffers from having one of the most unequal distributions of income in the world, comparable only to southern Africa or the Andean countries. Small elites working with strong militaries have long dominated countries in this region, exporting agricultural commodities, as well as engaging in other labour-intensive enterprises. The threat of renewed instability and conflict remains. Guatemala has long had a problem with vigilante justice; a response to a lack of police presence in much of the country. Honduras experienced a coup d'état in 2009, when the serving president attempted to attain public support for an extended term of office.

As a result of this legacy of violence, instability and inequality, the Northern Triangle of Central America has the highest murder rate of any region in the world, and very high rates of other forms of violent crime. It has also experienced political violence, and at times the distinction between criminal and political violence can be difficult to discern. The southern countries in Central America do not appear to be as affected by drug trafficking as those in the north, and do not have comparable murder rates, despite a history of political violence in countries like Nicaragua.[25]

25 There are exceptions in areas highly affected by drug trafficking. For example, the murder rate in Panama in 2006 was only 11 per 100,000, but the rate in Panama City was 30 per 100,000.

Contrary to what would be expected, in none of these countries is the highest murder rate found in the largest cities. Rather, it is found in provinces that have strategic value to rival drug traffickers. For example, Guatemala's Petén province is rural and largely indigenous, two variables that negatively correlate with violence elsewhere in the country. But it is also a major drug trafficking zone, where jungle landing strips provide easy access to the Mexican border. It may also be a contested area, where Los Zetas and the Sinaloa Federation both have an interest. These are likely the reasons it has the highest murder rates in the country.

Other provinces have the misfortune of containing key ports for traffickers, such as the provinces of Atlántida in Honduras, Sonsonate in El Salvador, Escuintla in Guatemala and Michoacán in Mexico. The death count has risen over time as a growing share of cocaine trafficking is conducted through this region. It also appears that Mexican cartels are settling their differences further up the trafficking chain, employing local killers to disrupt the operations of their rivals.

Honduras has the unfortunate distinction of having the fastest-growing murder rate in the region, which may be associated with increased use of the country as a landing site for cocaine-laden aircraft from Colombia and the Bolivarian Republic of Venezuela. It also hosts the province with the highest murder rate in the region: Atlántida, where one out of every 1,000 people was murdered last year. The capital of Atlántida is La Ceiba, a port well known for its use by cocaine traffickers, and the site of clandestine landing strips.[26] In December 2009, General Aristides Gonzalez, director general of the national office for combating drug trafficking, was murdered. The General had embarked on a campaign against the unauthorized airports found across the country, some of which are said to be linked to the Sinaloa Federation. Just before his murder, he had seized a major strip, and threatened to take action against all property owners on whose land the strips were found.

The groups involved in this region are less well-defined than in Mexico. For most forms of crime in the region, the blame often falls on two street gang confederations founded by deportees from the USA: Mara Salvatrucha (MS13) and Calle 18 (M18). But there is little evidence that these groups, comprised of street youth intensely focused on neighbourhood issues, are widely engaged in large-scale transnational drug trafficking. Most are based in inland cities, far from the maritime routes along which most cocaine flows before arriving in Mexico. They are certainly culpable in street sales in the areas they control, but their capacity to engage in bulk trans-

26 La Ceiba was regarded as a major drug trafficking port by the US Drug Enforcement Administration as early as 2001. (See: http://www.hawaii.edu/hivandaids/Honduras_Country_Brief__Drug_Situation_Report.pdf).

Map 2: Murder rates in Mesoamerica, 2009

Source: Official sources

national smuggling is questionable. Some may be recruited as hit men by the Mexican organizations. They frequently tattoo their faces as a sign of their commitment to the gang, however, so they are ill-suited for any operation involving possible contact with the public or the authorities. The maras have engaged in demonstrative violence in the past, including the random killing of civilians, but there is little to indicate they have any kind of political agenda, aside from avoiding police interference with their affairs.

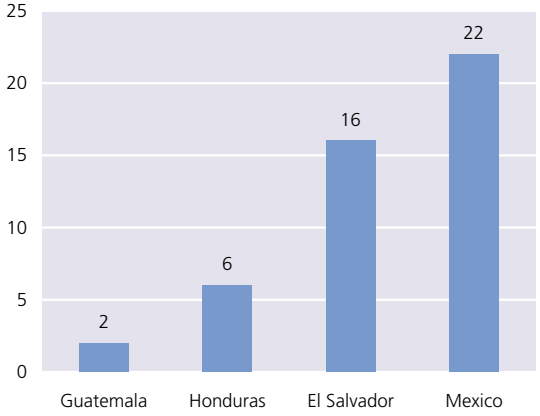
The repeated arrests of high-level officials in the police and the military, in contrast, suggest that the main traffickers in Central America are far more sophisticated than street gangsters, and are tied to some members of the ruling elites, rather than the underclass. There is also growing evidence of Mexican cartel penetration into Central America, particularly regarding Los Zetas in Guatemala and the Sinaloa Federation in Honduras.

In both Mexico and Central America, trafficking groups have gone on the offensive, murdering a number of prominent law enforcement officials who dared to oppose them. For example, in December 2009, the head of the Honduran anti-drug agency was murdered, as was Mexico's federal police chief in 2008. Organized criminals also target rank-and-file police officers for retaliatory killings. In June 2009, 12 federal police agents were tortured and killed, and their bodies dumped, when the Mexican police arrested a high ranking member of La Familia Michoacana. Civilians have also been targeted for demonstrative attacks, such as the 2008 Independence Day grenade attacks in Morelia.

In all of these countries, cocaine-related corruption at the highest levels, on occasion including the national heads of police and drug enforcement agencies, has been detected. For example, the Guatemalan police have been through a long series of purges and reformations. In August 2009, President Colom fired the director general of the national police, his deputy, his operations head and his investigations head after large amounts of cocaine and cash went missing. Before this, in 2005, the country suffered the indignity of having its top drug officials

Fig. 14: Drug trafficking arrests per 100,000 citizens, 2008

Source: UNODC DELTA



arrested by a foreign government: the head of the drug enforcement agency, his deputy and another top drugs official were arrested for drug trafficking after being lured to the United States on pretence of training. The drug enforcement branch they commanded was itself a reworking of a previous agency, which had been disbanded following arrests of members for similar diversions. The agency was reworked yet again in 2009.

The United Nations Commission against Impunity in Guatemala (CICIG) assisted in investigations in which the national director of the civilian police, his deputy director, the attorney general, the chief prosecutor, the head of the public defence institute, and three supreme court justices were removed from office. It also assisted in the indictment of the former President (Antonio Portillo), the former minister of defence (Eduardo Arévalo Lacs), the former finance minister (Manuel Maza Castellanos), two acting directors of police, the director of the Anti-Narcotics Investigation and Analysis Department and a major general (Enrique Ríos Sosa, son of the former dictator Efraín Ríos Montt).

Similarly, in August 2008, the Mexican Government launched 'Operation Cleanup', aimed at purging the top ranks of the police of drug cartel corruption. The operation resulted in the jailing of both the interim commissioner of the Federal Police and the acting head of the counternarcotics division, among others. The same month, El Salvador's chief of police resigned when two top aides were accused of drug links. The corruption extends outside the police, and has implicated other criminal justice officials, legislators and members of state and local government.

But this situation is complicated: accusations of drug complicity can be used to take out opponents, and some of those assassinated by traffickers may have been erstwhile collaborators. The fact that high-level corruption continues to be detected and the officials removed shows that the struggle is very much alive and that progress is being made.

Some have argued that the violence in Mexico is tied to the Government's efforts to stop the drug trade, not the drug trade itself. While it is true that enforcement can create instability in drug markets that can lead to violence, enforcement in countries like Guatemala is much weaker and the murder rate is at least four times higher. In addition, most of the deaths in the 'cartel wars' are of cartel members themselves, fighting over trafficking routes. These groups have shown their willingness to diversify into other areas of crime, and recent losses in cocaine revenues seems only to have intensified the violence. A policy of appeasement is impractical: these people, and corrupt officials who support them, cannot be allowed to remain in place. The treatment is painful, but the alternative is to lose the patient itself.

This may sound like an exaggeration, but many who have worked closely with law enforcement in the region concur. In December 2008, the head of UN CICIG said, "If the Guatemalan authorities are unable to stop the infiltration of Mexican drug cartels, in two years they could take over Guatemala City."[27] President Colom has issued a series of 'state of prevention' orders in response to the violence in which constitutional liberties are restricted for a period of time in certain parts of the country. Moreover, there have been a series of attacks against labour union leaders, environmentalists and human rights defenders.[28] While Guatemala appears to be the most affected, its problems are not unique, and the stability of all countries in this region requires that transnational organized crime be controlled.

To do this, the countries need support in strengthening local law enforcement and governance. But even more importantly, they need the assistance of the international community in addressing the transnational flows affecting their countries. The drug wars they face are fuelled by a cocaine trade that runs the length of the region. Mexico's killers are armed largely by weapons trafficked from the north, but potentially also from the south. Dealing with these threats requires both national institution-building and a global strategy to address the relevant trafficking flows.

27 Painter, J., "Guatemala fears Mexico drug spillover". *BBC News*, 17 December 2008: http://news.bbc.co.uk/2/hi/7786392.stm

28 International Federation for Human Rights, Observatory for the Protection of Human Rights Defenders, *Annual Report 2009 - Guatemala*, 18 June 2009, available at: http://www.unhcr.org/refworld/docid/4a5f301521.html

3.4 Transit countries in West Africa

West Africa is one of the poorest and least stable regions on earth. All but three of the 16 countries in this region[29] are on the United Nations list of 'least developed countries', including the five countries with the very lowest levels of human development. West Africa has experienced at least 58 coups and attempted coups, including some in just the last year. There remain many active rebel groups in the region.

At present, of the 15 nations of the Economic Community of West African States (ECOWAS), about half are experiencing some form of instability. Long-standing insurgencies are found in Côte d'Ivoire, Senegal, Mali, Niger and, arguably, Nigeria. Both Sierra Leone and Liberia are recovering from brutal civil wars. According to one recent rating of the 25 countries with the highest risks of instability globally, nine were in West Africa: Niger, Mali, Sierra Leone, Liberia, Mauritania, Guinea-Bissau, Côte d'Ivoire and Benin.[30]

Large-scale cocaine trafficking through West Africa was first detected around 2004, symptomatic of a shift in the centre of gravity of the global market from the United States to Europe. West African traffickers had long been active in small-scale import and marketing of cocaine in Europe, as they have been in many other parts of the world. But around this time, individuals based in West Africa began to provide logistic assistance to South American traffickers in organizing their maritime shipments to Europe from at least two hubs: one centred on Guinea-Bissau and Guinea in the north, and one centred on the Bight of Benin in the south; both involving Nigerian traffickers.

Mother ships from South America could unload cargoes to smaller craft from the coast, and the cocaine could be stored, repackaged and redirected to European buyers from this vantage. In exchange for their services, it is believed that the West Africans were paid in kind: they were allowed to retain up to one third of the shipment to traffic on their own behalf, which they did mainly via commercial air couriers.

By 2008, the situation began to change. Heightened international awareness of the threat made trafficking via West Africa more difficult. In addition, a series of events shifted the political terrain in the northern hub:

- In August 2008, the head of the navy of Guinea-Bissau fled the country under allegations that he was orchestrating a coup d'état.
- In December 2008, the man who had ruled Guinea for 24 years died, and a military cabal took control, later arresting two of his sons and several prominent officials for their involvement in drug trafficking.
- In March 2009, the head of the army of Guinea-Bissau was murdered, and, shortly afterward, in an apparent reprisal attack, so was the president.

Whatever the cause, both maritime seizures and airport seizures on flights originating in West Africa virtually disappeared at the end of 2008. Some trans-Atlantic traffic may have shifted to private aircraft, however. In November 2009, a Boeing 727 jet was found alight in Central Mali. It is believed that the plane departed from the Bolivarian Republic of Venezuela and that it was carrying cocaine. Some may be trafficked by means as yet undiscovered. The cocaine trade through West Africa continues, but apparently at a reduced rate of perhaps 25 tons per year, with a retail market value of US$6.8 billion at destination in 2008. However, there is anecdotal information from law enforcement circles that cocaine trafficking via West Africa may have started to increase again in late 2009.

The greatest danger posed by cocaine is its enormous value compared to that of local economies. This allows traffickers to penetrate to the very highest levels of government and the military. Law enforcement officials can be offered more than they could earn in a lifetime simply to look the other way. This extreme leverage has allowed traffickers to operate with very little resistance from the state, and therefore, there is little need to resort to violence. There appears to have been some violence in elite circles as rivals compete for access to these profits, however.

Guinea-Bissau provides an example. The country was one of the first to be affected by the cocaine trade in the region, and, due to the small size of its economy (its GDP was US$400 million in 2008), one of the worst affected. The drug trade seemed to be quickly monopolized by the military, controlled by top-ranking military officials. These officials have threatened all who dare to discuss their involvement.

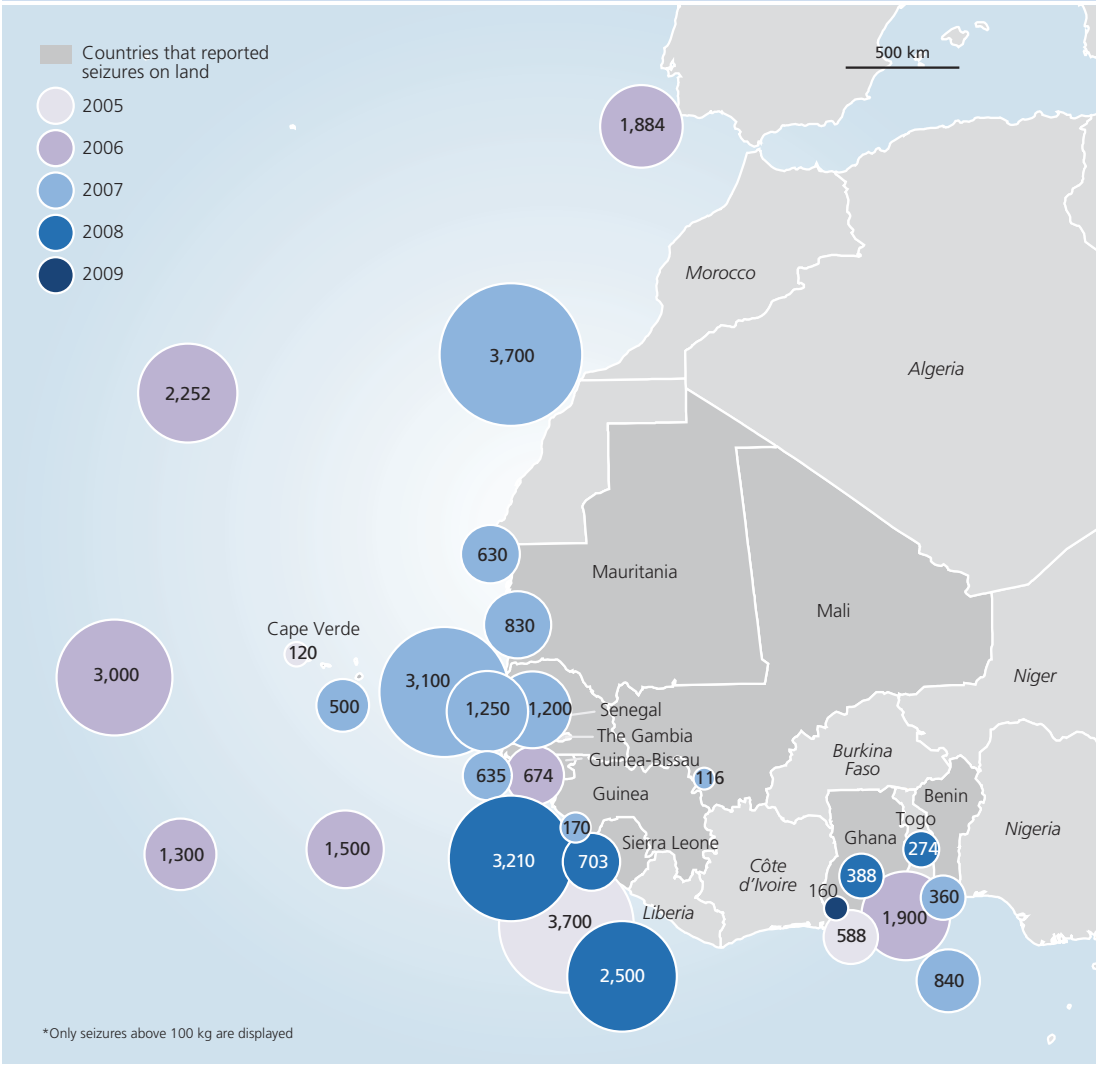
From 2007 onwards, high-level officials have accused the military of running the drug trade, including the Interior Minister and the head of the Judicial Police. Drugs have been detected arriving on military air strips, military officers have been arrested in possession of hundreds of kilograms of cocaine, and there have been several armed stand-offs between police and military forces concerning drug shipments. Drugs seized by the police have been confiscated by the military and have subsequently disappeared. Accused soldiers, as well as foreign traffickers, have been simply released from custody. In July 2008, both the Attorney General and the Minister of Justice said they had received death threats related to

29 For the purposes of this discussion, ECOWAS plus Mauritania, a former ECOWAS member.

30 Hewitt, J., J. Wilkenfeld and T. Gurr, *Peace and Conflict 2010* . Center for International Development and Conflict Management, University of Maryland, 2010.

Map 3: Place of cocaine seizures (quantity in kg*)

Source: UNODC



investigations into a cocaine seizure.[31] Several journalists and activists have had to flee the country or go into hiding after they received death threats for reporting on military involvement in drug trafficking. Both the (then) head of the army (Batista Tagme na Wai) and the head of the navy (José Bubo Na Tchuto) appear to have been involved in making these threats.[32]

Tagme na Wai is now dead, killed in March 2009 by an attack that his men blamed on the serving president, João Vieira. In retaliation, they attacked the presidential palace and killed the president. Tagme na Wai had accused Vieira of involvement in drug trafficking prior to the 2008 elections, but the attacks appear to be the product of a long-standing rivalry between the two men.

Bubo Na Tchuto had to flee the country in August 2008, after being accused of involvement in a coup to overthrow Vieira. He took refuge in the Gambia, where he was accused of being involved in illegal activities. Upon return to Guinea-Bissau in December 2009, he took refuge in the United Nations compound. On 1 April 2010, soldiers loyal to Bubo Na Tchuto, including the deputy head of the military (Antonio Ndjai), took the Prime Minister hostage and ousted the head of the military, replacing him with Ndjai. This allowed the

31 BBC News, *Fear after Bissau death threats*. 1 August 2008.

32 Vincent, L. *Guinea-Bissau: Cocaine and coups haunt gagged nation*. Paris: Reporters without Borders, November 2007.

Map 4: Share of cocaine couriers detected at selected European airports originating in West Africa, by quarters, 2006-2009

Source: IDEAS database

former navy head to emerge from the UN compound and assume the role of Ndjai's deputy.

On 8 April 2010, the United States Treasury designated Bubo Na Tchuto a drug kingpin, freezing his US-controlled assets and prohibiting any US citizens from having any economic transaction with him. The present Air Force chief of staff, Ibraima Papa Camara, was similarly designated a drug kingpin. In other words, as of April 2010, the armed forces of Guinea-Bissau are controlled by people designated as drug traffickers and their associates by the US Government. If these accusations are true, it is highly likely that the northern hub of cocaine trafficking will be revitalized again.

Guinea-Bissau is not unique in this respect. In Guinea, the presidential guard, commanded by one of the president's sons, appears to have been involved in drug trafficking, alongside a number of high-ranking public security officials, making use of diplomatic pouches and passports to move drugs. Another of his sons has also been accused of involvement: both were arrested when their father died in late 2009. The leader of the coup, Moussa Dadis Camara, was later shot by his aide-de-camp, Lieutenant Aboubacar (Toumba) Diakete.

After the disruptions in Guinea-Bissau and Guinea, it appears this hub relocated to the Gambia, the county where Bubo Na Tchuto fled. In the Gambia in March 2010, the president ordered the arrest of 11 top-level law enforcement officials in the country in connection with drug trafficking, including the Director of the National Drug Enforcement Agency, his deputy and his head of operations, the National Police Chief and his deputy, the chief of the navy, the deputy chief of the army, and the Minster of Fisheries. In Sierra Leone, the Minister of Transportation resigned after his brother was implicated in the country's largest cocaine seizure.

Aside from a few high-level killings, it is difficult to measure the impact of the drug trade on local violence levels, because reliable current data on homicide in West Africa is hard to come by. Given that the drug trade is known to have penetrated to the very highest levels of government, however, it is unlikely that there is widespread conflict over the cocaine markets, because few would dare challenge the reigning authorities. Rather, the violence is likely to be episodic, in response to power shifts within the structures responsible. There is no need for violence when corruption will do.

Similarly, with state authorities dominating the trade in some countries, it is perhaps not surprising that there is little evidence of insurgents dealing in the drug. There have been allegations that rebels in the north of Mali and Niger, as well as political militants in Algeria, have been involved in trans-Saharan trafficking, but little evidence is currently available on this flow. There remains a risk that some of the dormant militant groups in West Africa will somehow be revivified by the trade, but again, there is little evidence of this at present.

The countries of West Africa need help in strengthening their capacity to resist transnational organized crime. Recent efforts against the cocaine trade, with the support of the international community, have shown promising results. But, rich or poor, there is no region in the world that can be entirely shielded against transnational organized crime. West Africa remains particularly exposed, and the region will continue to face serious potential threats to governance and stability as long as transnational contraband markets are not addressed.

3.5 Conclusion

This chapter has illustrated the ways that drug trafficking can be both a symptom of, and a factor in, instability in transit regions around the world. Both drug trafficking and conflict undermine the rule of law and, in combination, they can have long-term impact on the prospects for peace and prosperity. The violence associated with the cocaine trade can be tantamount to civil war in the worst affected areas. Left unaddressed, drug-derived riches can buy the arms and the influence to affect the course of political events, particularly in poorer regions.

The precise effect cocaine trafficking has on an area depends on the circumstances of that area, however. In Colombia, powerful traffickers posed a direct threat to the state, and once defeated, drug-fuelled illegal armed groups continued the attack. Dedicated enforcement and international cooperation appear to have completely turned the tide, but the struggle is far from over. Mexico appears to be engaged in an earlier stage of the same struggle, but without the illegal armed groups to worry about.

The growth of drug money flows can generate violence, as has been the case in Guatemala, but so can their withdrawal, as appears to have been the case in Jamaica. Any sudden change, whether it be in volumes or players, seems to have the potential to set off a violent competition for opportunity. A far more insidious effect is seen in West Africa, where the drug trade appears to be controlled by national figures so powerful that little opposition is possible, but where disputes over markets can lead to the toppling of governments.

One area where immediate progress can be made is to fully integrate crime prevention into United Nations peace operations. A large number of UN peace missions are operating in regions affected by drug trafficking, including West Africa (UNOCI in Côte d'Ivoire, UNMIL in Liberia, UNOGBIS in Guinea-Bissau, UNIPSIL in Sierra Leone and UNOWA for West Africa as a whole), South-West and Central Asia (UNAMA in Afghanistan and UNRCCA in Central Asia) and South-East Europe (UNMIK in Kosovo). The United Nations Police would be in a good position to coordinate the international actors engaged in promoting peace to ensure that crime prevention measures are built into development planning.

Drug money flows can have devastating local effects, but their dynamics are almost always international. Targeting these international linkages can provide a point of insertion for those interested in reducing the potential for conflict. Strategies aimed at addressing drug flows, executed in areas with stronger governance, could play a pivotal role in addressing civil conflict, by removing the profit motive that keeps many antagonists armed and in the field. Put simply, reducing drug trafficking can help foster peace.

The problem is that most efforts against drugs are national, or, at best, bilateral, when the scale of the trafficking is global. Without a strategy scaled to fit the size of the problem, successful national efforts run the risk of simply displacing contraband flows. When opposed, the drug markets have consistently adapted, finding new cultivation areas, transit zones and consumer markets. In many cases, they have settled in the areas of least resistance, which are precisely the areas least equipped to deal with the challenge. And it is here that organized crime can escalate to the level of being a threat to stability.

The world does have a framework for dealing with these drugs internationally, in the form of the Single Convention on Narcotic Drugs of 1961 (as amended by the 1972 Protocol); the Convention on Psychotropic Substances of 1971; the Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988; the Convention against Transnational Organized Crime of 2000 (and the protocols thereto) and the Convention against Corruption. A great deal of successful collaboration has occurred under this aegis, but more could be done. Too often, work under the Conventions has been limited to law enforcement, while transnational organized crime cannot be reduced to a criminal justice issue. The Conventions provide a bedrock, but they do not constitute a global strategy.

To deal comprehensively with these intractable and interlinked issues, there can be no substitute for coordinated international action. The United Nations is well suited to provide the coordination needed to address these global issues at the level required.

4. STATISTICAL ANNEX

4.1 Production

4.1.1 Challenges in estimating the production of pure cocaine HCl

For many years, UNODC has estimated the potential production of cocaine for each producing country with the purpose of providing information on the global supply of cocaine. Potential production refers to the amount of cocaine that would be produced if all the leaves harvested from the area under coca cultivation in one year would be converted into 100% pure cocaine hydrochloride (HCl).[1] The reference to 'potential' production underscores the fact that the recovery of cocaine from the leaves may not be absolute (that is, 100% recovery). The term *laboratory efficiency* is therefore employed as a measure of how efficient a particular process is. Coca paste and cocaine base (intermediate products of the transformation process from leaves to cocaine HCl) can also be marketed and consumed. In addition, these intermediate products and leaves may be seized before they are processed into cocaine.

Traditionally, the production of cocaine HCl includes three steps. The first is the conversion of the coca leaf into coca paste; this is almost always done very close to the coca fields to cut down on the transport of the coca leaves. The second phase is the conversion of coca paste into cocaine base. The final stage is conversion of base to HCl. In recent years, this process has been cut into two stages, where leaves are converted directly to cocaine base.

In order to estimate the total potential production of pure cocaine HCl, the following elements need to be measured:

- Cultivation
- Quantity of leaves per ha per year (yield)
- Quantity of leaves needed to produce 1 kg of 100% pure cocaine HCl. This includes the following elements:
  - Alkaloid content of leaves
  - Laboratory efficiency (the percentage of alkaloid content that can be extracted in the laboratory process)

1 In Peru and the Plurinational State of Bolivia, a certain amount of coca leaves (leaves harvested from 12,000 ha of coca bush grown under law 1008 in Bolivia and 9,000 mt of coca leaves in Peru are estimated to be used for traditional purposes) is subtracted from the calculation of potential cocaine production.

Over the years, UNODC has undertaken studies in the three producing countries of the Plurinational State of Bolivia, Colombia and Peru.[2] Of the three components needed to estimate the potential production of cocaine HCl, UNODC regularly measures cultivation and yield,[3] but does not undertake any study to measure alkaloid content and laboratory efficiency. For this last step, it relies on an external source, the US Drug Enforcement Administration (DEA). The DEA is the only organization that has undertaken scientific studies to measure the alkaloid content of the coca leaves and laboratory efficiency in the Andean countries. In Colombia, the estimation process followed by UNODC differs from that used in the other two Andean countries. Using farmers' interviews, UNODC can estimate the quantity of cocaine base produced from the leaves, although it cannot estimate its quality.[4] Furthermore, it needs to estimate the average purity of the cocaine base produced and the conversion factor between cocaine base and cocaine HCl.

There is a certain level of uncertainty in each of the three stages necessary to estimate potential cocaine production.

Estimating cultivation

Since 1999-2002,[5] UNODC's Illicit Crop Monitoring Programme (ICMP) has been monitoring coca cultivation in three Andean countries, the Plurinational State of Bolivia, Colombia and Peru. The cultivation estimates provide the situation at the end of each year. All coca surveys use remotely sensed images, that is, satellite images or aerial photographs,[6] which is the best means

2 In each country, UNODC has project teams to conduct the surveys with assistance from a team of experts at UNODC headquarters in Vienna.

3 Yield studies are carried out by UNODC in Colombia (provinces are covered every five years on a rotating basis), the Plurinational State of Bolivia (Yungas of La Paz, 2005) and Peru (three major growing regions in 2003). No yield studies have been so far carried out by UNODC in Chapare/Bolivia where DEA yield estimates are used.

4 Through farmers' interviews, UNODC can only estimate the quantity of cocaine base produced, not its purity, since farmers are unaware of the level of purity of what they produce.

5 Since 1999 in Colombia, 2000 in Peru and 2002 in the Plurinational State of Bolivia. Since 2006, ICMP has been monitoring coca in Ecuador as well; however the extent of coca cultivation found there is negligible.

6 There are differences between satellite images, for example, in the

to undertake a systematic monitoring of the insecure and often inaccessible cultivation areas.

Every year, UNODC purchases satellite images from commercial image providers of all the areas where coca is grown. It is often a challenge to get images that are cloud-free, and therefore, the images are acquired over a period of several months, tasking the satellites or searching in recent archives. After acquiring suitable images, a team of experts systematically digitizes all the fields with coca bushes.[7] Identification of the crops can be challenging. Satellite images are taken at a height of hundreds of kilometres above ground and do not give the same detailed image as a snapshot taken from the ground. On the other hand, satellite images contain more information than a normal photo, since the satellites have extra sensors to register infrared colours. Precisely these infrared colours help to distinguish vegetation types.[8]

In the classification process, additional geographical information is used to judge whether the fields appearing in the satellite image are really coca fields. For example, information on the places that were eradicated or sprayed is used as well as information from former surveys or contextual information, such as typical shapes, sizes and locations of coca fields. The interpretation of this diverse set of criteria is difficult to automate and is mostly done by human interpreters. All interpreters have extensive experience in working with satellite images and they are all familiar with the coca cultivation areas. The interpreters follow so-called interpretation keys to avoid systematic errors or differences between the interpreters.[9]

Monitoring with satellite images should always be accompanied by ground control. Ideally these controls are performed by field visits throughout the monitored area. Since access to the ground in coca growing regions is often dangerous and difficult, UNODC performs ground 'truthing' by overflights with helicopters or small aeroplanes. Moreover, the results of the satellite interpretations are subject to independent quality controls with detailed aerial photos.

Estimating yield

Coca leaf yield is affected by unpredictable factors such as weather and plant diseases, as well as by eradication activities. The effect of these factors varies not only from year to year and during the course of a year but also from one cultivating region to the other. Since 2004, UNODC, in cooperation with the respective governments, has undertaken coca leaf yield studies in many coca growing regions in the Plurinational State of Bolivia, Colombia and Peru. In the Plurinational State of Bolivia, a yield study was carried out in 2005 in the Yungas region, where the annual yield was estimated at 1.3 mt of sun-dried leaves per hectare. In Chapare, the other cultivating region, UNODC relies on DEA estimates, which report a yield of 2.7 mt/ha. In Peru, UNODC undertook a yield study in 2003, estimating the annual average yield to 2.2 mt/ha of sun-dried leaves. In Colombia, starting in 2004-2005, UNODC/SIMCI fields a yearly yield study which covers one or two regions on a rotating basis. The core element of these studies is the controlled harvest of mature coca fields.

The challenges related to the estimation of the annual yield relate to the difficulties of measuring the different harvests occurring in one year (four on average) and capturing the variation that the yield may have from one year to another. Ideally, the yield should be measured every year, in order to consider the climatic and environmental changes. However, yield studies need substantial resources, and not all areas under coca cultivation are accessible to field researchers for security reasons.

Latest coca yield estimates

Source: UNODC studies

Country, region	Year of study	Yield (mt/ha)
Bolivia, Yungas	2005	1.3 mt/ha sun-dried
Bolivia, Chapare	2006 (Source: DEA)	2.7 mt/ha sun-dried
Peru	2003	2.2 mt/ha sun-dried
Colombia, Meta-Guaviare	2008	5.1 mt/ha fresh leaf
Colombia, Sur de Bolívar	2007	5.7 mt/ha fresh leaf
Colombia, Putumayo-Caquetá	2008	4.1 mt/ha fresh leaf
Colombia, Orinoco	2005	7.1 mt/ha fresh leaf
Colombia, Pacífico	2009	3.8 mt/ha fresh leaf
Colombia, Catatumbo	2007	4.2 mt/ha fresh leaf
Colombia, Sierra Nevada	2007	2.9 mt/ha fresh leaf

detail ('spatial resolution' or 'pixel size') of the images. The more detailed, the more expensive the images. However, the area to be monitored in Colombia is about 20 times larger than the areas in Peru or the Plurinational State of Bolivia, and therefore, the type of images is not the same in the three countries.

7 The full coverage of all the areas helps the governments to have local information on changes and target specific crop reduction programmes.

8 Coca is a bush and the leaves can be harvested throughout the year. Therefore, the crop stage can vary by field but also within a field. At the time a satellite image is taken, a field can contain different crops in different growing stages, which gives a different appearance in the satellite images.

9 The keys were developed with the assistance of the University of Natural Resources and Applied Life Sciences in Vienna.

Conversion factors from coca leaves to cocaine HCl

Source: DEA scientific studies

Country	Year of DEA study	Conversion factor[11] (quantity of leaves needed to produce 1 kg of 100% pure cocaine HCL)
Plurinational State of Bolivia	1993	370 kg sun-dried (Chapare) 315 kg sun-dried (Yungas)
Plurinational State of Bolivia	2007-2008	256 kg sun-dried (Chapare) 244 kg sun-dried (Yungas)
Peru	1994	400 kg sun-dried
Peru	2005	220 kg sun-dried

Conversion factor from coca leaves to cocaine

Estimating the conversion factor from coca leaves to cocaine requires two steps: i) measuring the alkaloid content of the leaves, and ii) calculating the efficiency used by traffickers in the laboratory conversion process where cocaine base is converted into cocaine HCl. The alkaloid content of the leaves can be measured by analysing the chemical composition of a sample of coca leaves from the field. Studies have shown that it varies across geographical regions, but it does not significantly change over time. Alkaloid content is highest in Peru and the Plurinational State of Bolivia, where it is about 0.7%, and lowest in Colombia, where it is about 0.53%.[10]

Laboratory efficiency is more difficult to measure as there are different influencing factors: quality of the raw material and precursor chemicals used, the technical processing method employed, the size and sophistication of laboratories, and the skill and experience of local workers and chemists. Studies to measure the efficiency are carried out by trying to simulate the real environment where traffickers process cocaine in a laboratory. According to these studies, there are two main methods to produce cocaine: the solvent extraction method and the acid extraction method. The solvent method is thought to be the most efficient; however, traffickers are making the acid extraction method very efficient in Peru, where this method is most used.[11]

The impact of conversion factors in the production estimates for the three Andean countries

According to the scientific studies conducted by the DEA, in the last decade, there has been an increase in the efficiency of the clandestine laboratories employed in the three Andean countries, which has resulted in different conversion factors from leaves to cocaine. These changes are mainly due to the higher percentage of traffickers using more efficient methods to extract the cocaine.

Until 2009, UNODC used the conversion factors obtained by the DEA in its previous round of studies dated 1994 in Peru and 1993 in the Plurinational State of Bolivia. In recent years, the DEA obtained new conversion factors which lead to a higher estimate of cocaine production (showing the need for a lower amount of leaves to produce pure cocaine).

In Colombia as well, more recent information obtained by UNODC shows that the conversion from cocaine base to cocaine HCL requires updated parameters:

Process used by UNODC to estimate 100% pure cocaine HCl from cocaine base of unknown purity

Source: DEA scientific studies

Cocaine base to cocaine HCl	1:0.9 (1 kg of base needed to produce 0.9 kg cocaine HCl)
Cocaine HCl	85% purity

Revised process to estimate pure cocaine HCl from cocaine base of unknown purity

Source: DEA scientific studies

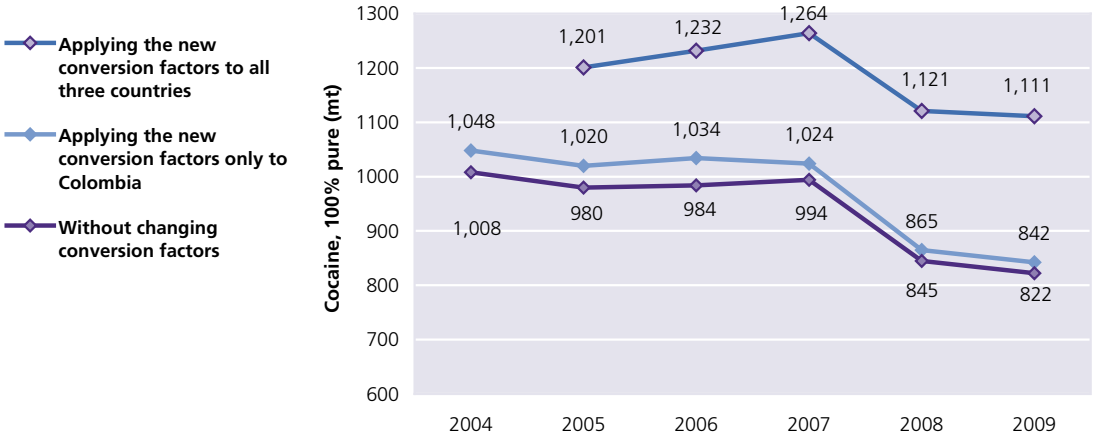
Average purity of cocaine base	81%
Cocaine base to cocaine HCl	1:1 (1 kg of base needed to produce 1 kg cocaine HCL)

10 Although these numbers represent a national average, they can not be used to calculate cocaine production at the national level since they hide very diversified alkaloid contents measured in different regions of the same country.

11 Taking into consideration the alkaloid content of leaves and the laboratory efficiency.

Impact of conversion factors on global estimates of potential cocaine HCl production (mt)*

* Assuming that all other parameters remain unchanged.



Applying the results of the more recent DEA studies has an effect on the level of cocaine production estimated for the three Andean countries, as shown in the graph. UNODC is currently analysing in more detail these new conversion factors.

4.1.2 Afghanistan

Fact sheet – *Afghanistan Opium and Cannabis Surveys 2009*[1]

	2008	Change on 2008	2009
Net opium cultivation (after eradication)[2]	157,000 ha (130,000-190,000 ha)	-22%	123,000 ha (102,000-137,000 ha)
Cannabis cultivation	No data		10,000-24,000 ha
No. of poppy-free provinces[3] No. of provinces affected by opium cultivation	18 16	+2 prov. -2 prov.	20 14
No. of provinces affected by cannabis cultivation	No data		17
Opium poppy eradication	5,480 ha	-2%	5,351
Weighted average opium yield	48.8 kg/ha	+15%	56.1 kg/ha
Average cannabis resin (garda) yield	No data		143 kg/ha
Potential production of opium in % of global potential opium production	7,700 mt 89%	-10%	6,900 mt 89%
Potential production of cannabis resin (garda)[4]	No data		1,500-3,500 mt
No. of household involved in opium cultivation[5] in % of total population	366,500 9.8%	-33%	245,200 6.4%
No. of households involved in cannabis cultivation	No data		40,000 (25,000-60,000)
Average farm-gate price (weighted by production) of dry opium at harvest time[6]	US$95/kg	-34%	US$64/kg
Average farm-gate price of cannabis resin (best quality) at the time of resin processing	US$51/kg	+14%	US$58/kg
Total farm-gate value of opium production in % of GDP[7]	US$730 million 7%	-40%	US$438 million 4%
Total farm-gate value of cannabis resin (garda) production	No data		US$39-94 million
Potential gross export value of opiates in % of GDP[7]	US$3.4 billion 33%	-18%	US$2.8 billion 26%
Potential net export value of opiates in % of GDP[7]	n.a.		US$2.3 billion 21%
Average yearly gross income from opium of opium growing households	US$1,997	-10%	US$1,786
Average yearly gross income from cannabis of cannabis growing households	No data		US$1,553
Income from opium per ha (gross/net)	US$4,700 / 2,585	-23%	US$3,600 / 2,005
Income from cannabis per ha (gross/net)	No data		US$3,900 / 3,341
Income from wheat per ha (gross/net)	US$1,600 / 1,280	-25%	US$1,200 / 960

1 The information in this section comes from the Afghanistan Opium Survey 2009 (UNODC/Ministry of Counter Narcotics) and can also be found at http://www.unodc.org/unodc/en/crop-monitoring/index.html. Source unless otherwise indicated: National Monitoring System supported by UNODC.

2 Figures in brackets represent the upper and lower limits of the 90% (for 2008) and 95% (for 2009) confidence interval.

3 Poppy-free provinces are those which are estimated to have less than 100 ha of opium cultivation.

4 Garda is the local term used in Afghanistan for the powder obtained by threshing and sieving the harvested and dried cannabis plants. This process is repeated several times and results in different quality of garda (first, second, …). Garda is further processed into hashish, which is the traded product.

5 Estimates are based on a population of 25.5 million and an average household size of 6.5 persons for 2009 (Afghan year 1387) and a population of 24.5 million for 2008 (Afghan year 1386). Source: Gov. of Afghanistan, Central Statistical Office.

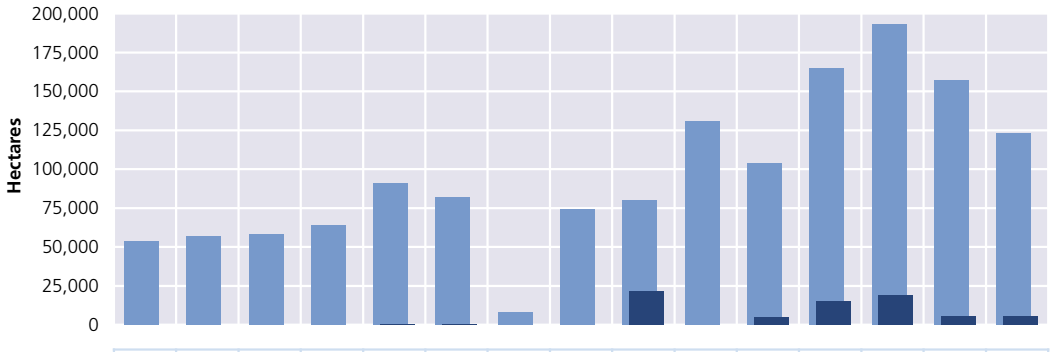
6 In 2008, the fresh and dry opium prices at harvest time were based on farmers responses collected through the Annual Opium Survey. In 2009, prices at harvest time were derived from the opium price monitoring system and refer to the month when opium harvest actually took place in different regions of the country.

7 Nominal GDP estimates, without the drug economy. For 2008: US$ 10.2 billion (Afghan fiscal year 2007/08), for 2009: US$ 10.7 billion (Afghan fiscal year 2008/2009): Source: Gov. of Afghanistan, Central Statistical Office.

Afghanistan, opium poppy cultivation and eradication (ha), 1995-2009

Note: Although eradication took place in 2004, it was not officially reported to UNODC.

Source: Cultivation: UNODC (1995-2002), since 2003: National Monitoring System supported by UNODC. Eradication: Government of Afghanistan



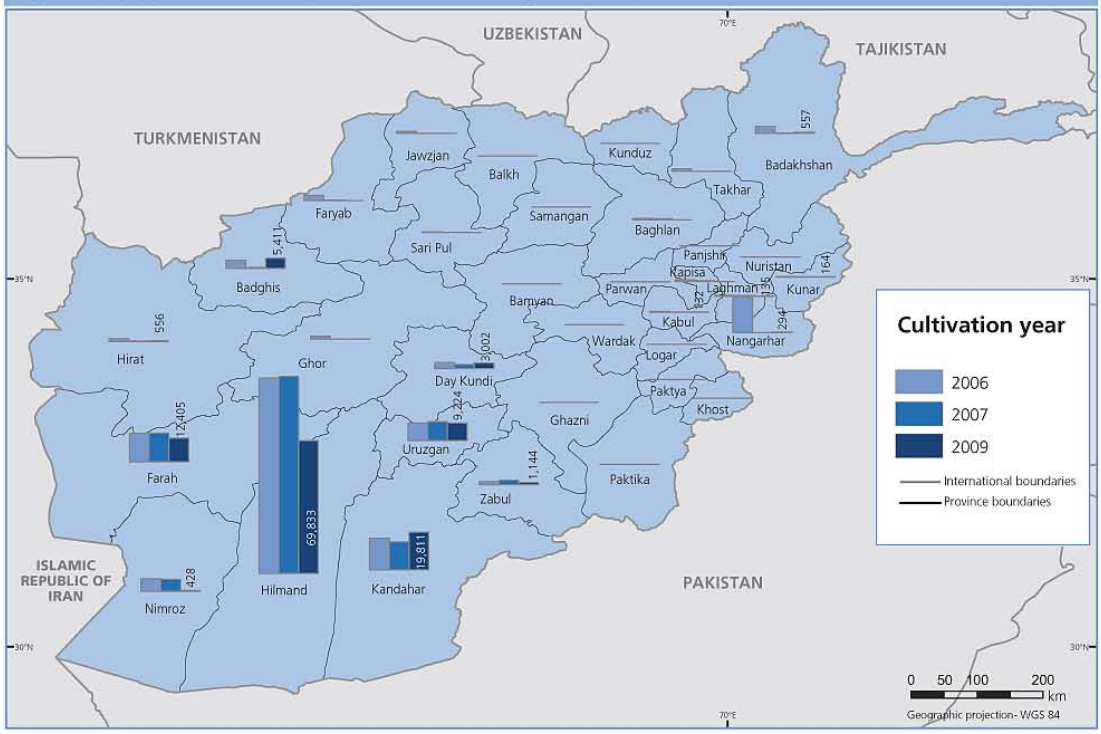
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cultivation	54,000	57,000	58,000	64,000	91,000	82,000	8,000	74,000	80,000	131,000	104,000	165,000	193,000	157,000	123,000
Eradication					400	121			21,430		5,103	15,300	19,047	5,480	5,351

Afghanistan, regional distribution of opium poppy cultivation (ha), 2008 – 2009

Region	2008 (ha)	2009 (ha)	Change 2008-2009	2009 (ha) as % of total
Southern	132,760	103,014	-22%	84%
Western	22,066	18,800	-15%	15%
Eastern	1,151	593	-48%	0.5%
North-eastern	200	557	179%	0.5%
Central	310	132	-57%	0.1%
Northern	766	Poppy free	NA	NA
Rounded Total	**157,000**	**123,000**	**-22%**	**100%**

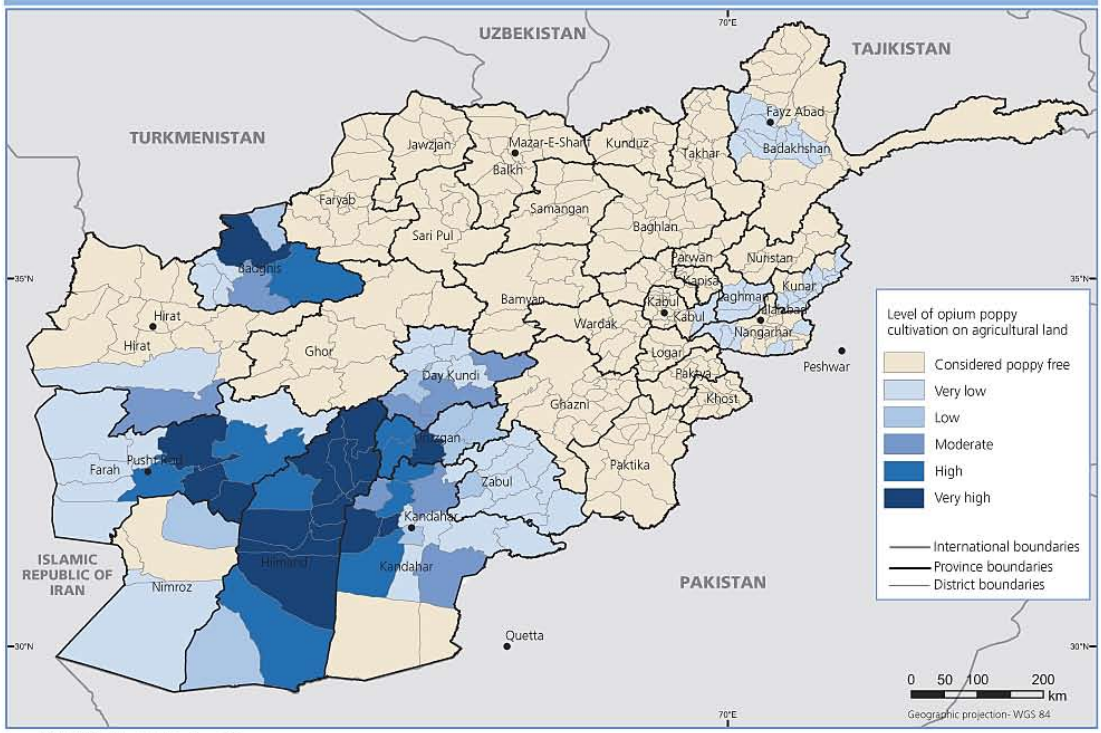
Estimates are based on a population of 25.5 million and an average household size of 6.5 persons for 2009 (Afghan year 1387) and a population of 24.5 million for 2008 (Afghan year 1386). Source: Gov. of Afghanistan, Central Statistical Office.

Opium poppy cultivation at provincial level in Afghanistan, 2007-2009



Source: MCN - UNODC Afghanistan Opium Survey 2009
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

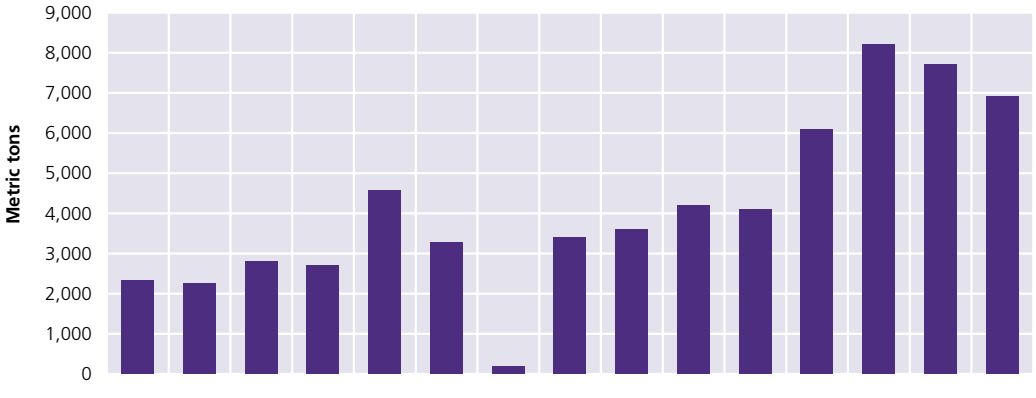
Opium poppy cultivation in Afghanistan, 2009 (at district level)



Source: MCN - UNODC Afghanistan Opium Survey 2009
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

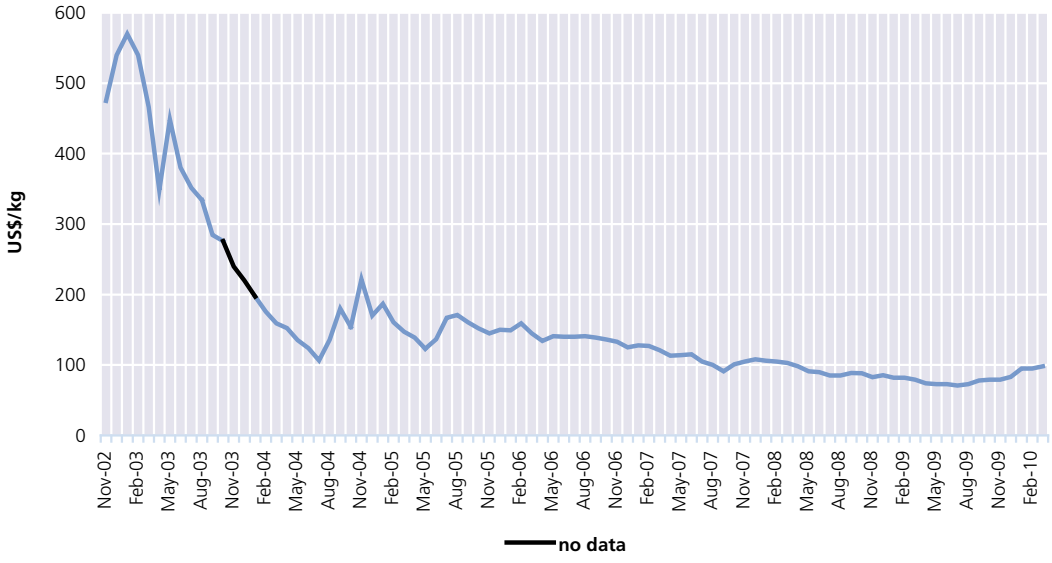
Afghanistan, potential opium production (mt), 1995-2009

Source: Cultivation: UNODC (1995-2002), since 2003: National Monitoring System supported by UNODC. Eradication: Government of Afghanistan

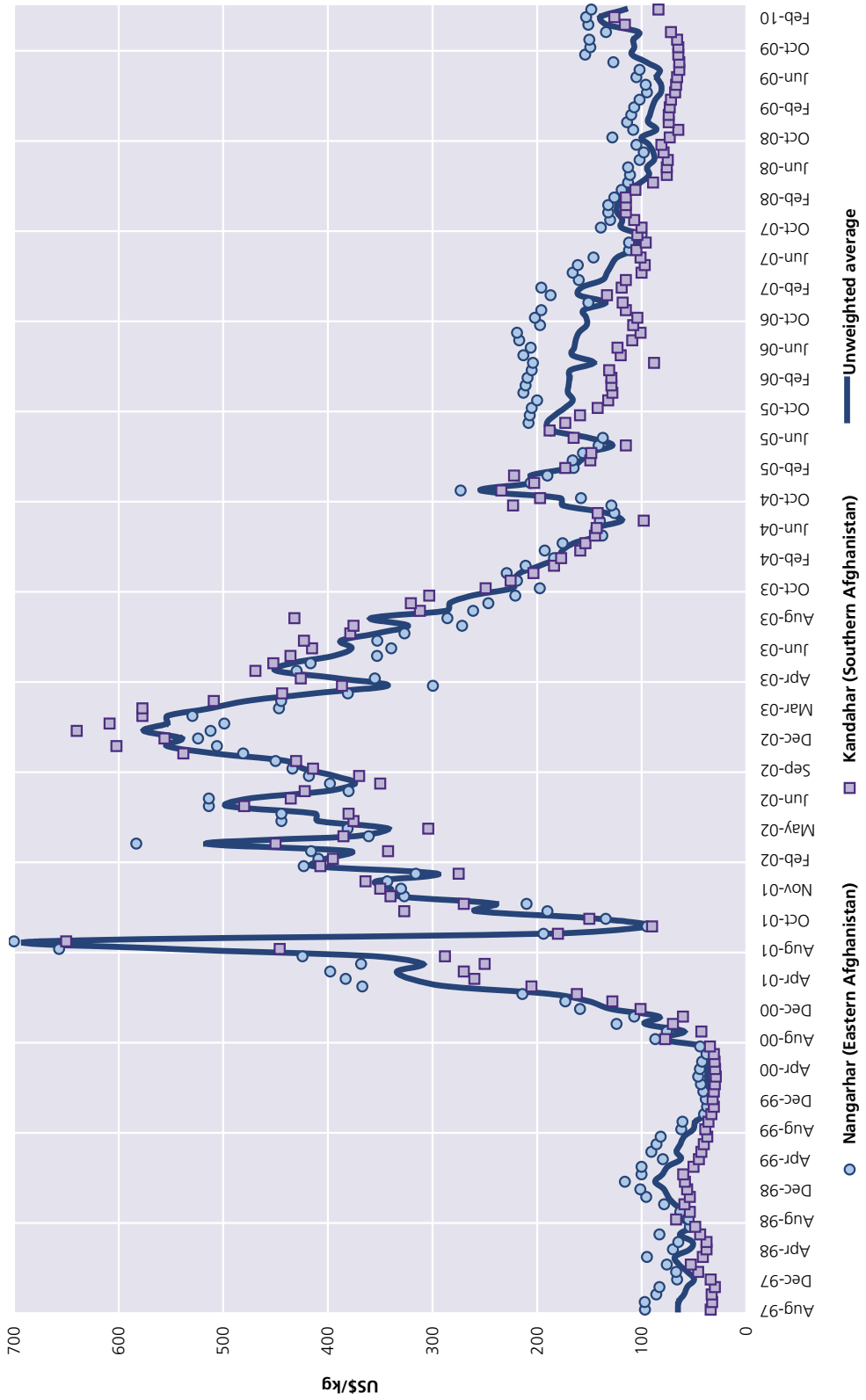


	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Opium production	2,335	2,248	2,804	2,693	4,565	3,276	185	3,400	3,600	4,200	4,100	6,100	8,200	7,700	6,900

Afghanistan, monthly farm-gate prices of dry opium (US$/kg), November 2002 to March 2009



Afghanistan, monthly trader prices of dry opium (US$/kg), August 1997 to March 2010



4.1.3 Bolivia (Plurinational State of)

Fact sheet – *Bolivia Coca Survey 2009*[1]

	2008	Change on 2008	2009
Coca cultivation	30,500 ha	+1%	30,900 ha
Of which in the Yungas of La Paz	*20,700 ha*	*+1%*	*20,900 ha*
in Chapare	*9,500 ha*	*+2%*	*9,700 ha*
in Apolo	*300 ha*	*0%*	*300 ha*
Of which permitted by Bolivian law 1008	*12,000 ha*		*12,000 ha*
Production of sun-dried coca leaf	54,000 mt	+1%	54,800 mt
Potential production of cocaine HCl	113 mt		n.a.**
National weighted average farm-gate price of coca leaf (outside state market)	US$5.4/kg	-9%	US$4.9/kg
Total farm-gate value of coca leaf production	US$293 million	-10%	US$265 million
GDP[2]	US$9.7 billion		US$13.0 billion
Farm-gate value of coca leaf production in %of GDP	3.0%		2%
Farm-gate value of coca leaf production in % of GDP of agricultural sector	21%		14%
Reported eradication of coca bush*	5,484 ha	+16%	6,341 ha
Reported seizure of sun-dried coca leaves*	2,095 mt	-22%	1,624 mt
Reported seizure of cocaine base*	21,641 kg	+2%	21,970 kg
Reported seizure of cocaine HCl*	7,246 kg	-32%	4,922 kg
Reported destruction of coca laboratories[3]*	4,999 kg	-2%	4,888 kg
Reported seizure of cannabis herb*	1,112,588 kg	+74%	1,937,412 kg

* As reported by the Government of the Plurinational State of Bolivia.

** Conversion rates from coca leaf to cocaine are currently being reviewed. This may lead to a revision of the 2008 figure (and of previous years). An estimate of the 2009 potential cocaine production was not available at the time of printing of this report.

1 The information in this section comes from the report on Coca Cultivation in Bolivia (UNODC/Government of Bolivia, June 2010), and can also be found on the internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National Monitoring System supported by UNODC.

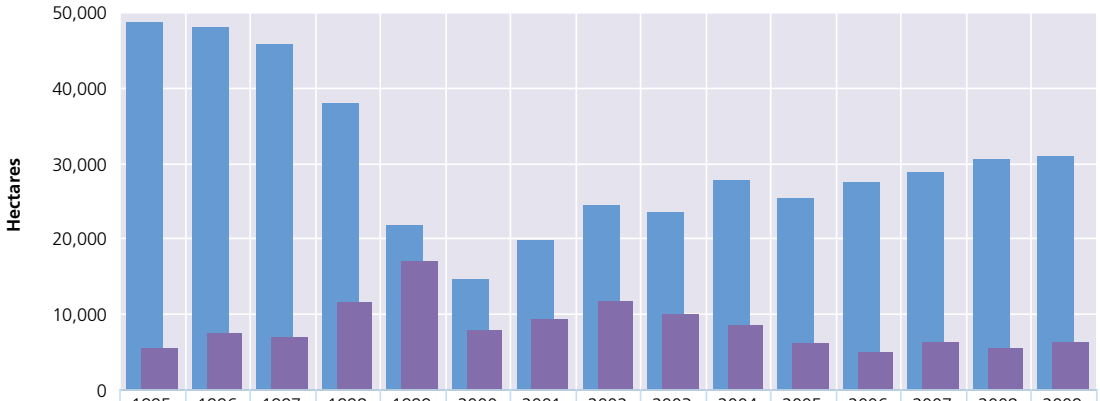
2 Source: Instituto Nacional de Estadística de Bolivia (INE).

3 Including installations producing cocaine base, HCl or "recycling" precursors. Excluding coca leaf maceration pits.

Plurinational State of Bolivia, coca cultivation and reported eradication (ha), 1995-2009

Eradication: Gov. of the Plurinational State of Bolivia. Includes voluntary and forced eradication.

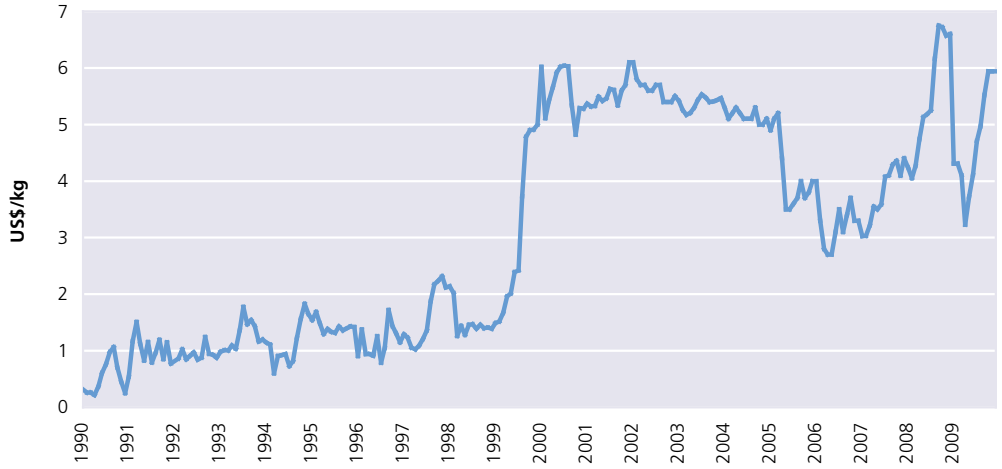
Source: Cultivation: 1995-2002: CICAD and US Department of State. For the region Yungas of La Paz since 2002, for all regions since 2003: National Illicit Crop Monitoring System supported by UNODC



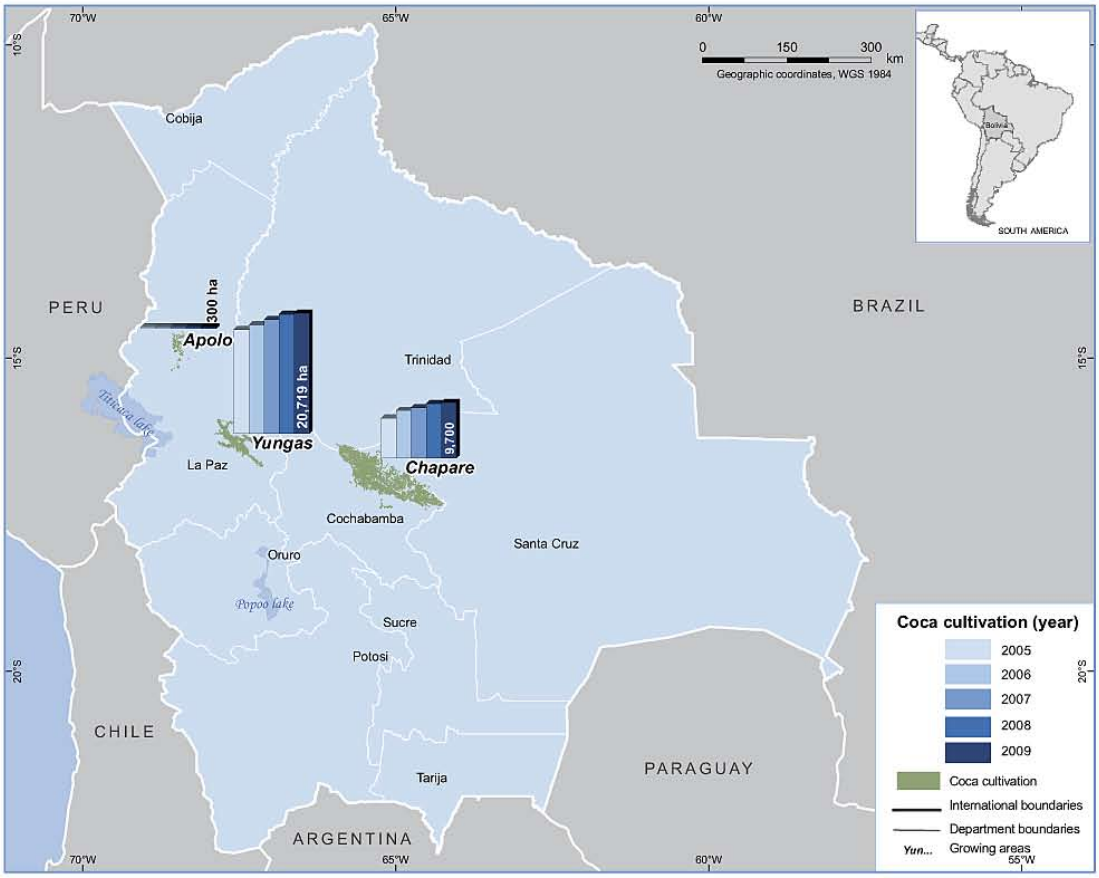
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cultivation	48,600	48,100	45,800	38,000	21,800	14,600	19,900	24,400	23,600	27,700	25,400	27,500	28,900	30,500	30,900
Eradication	5,493	7,512	7,026	11,621	16,999	7,953	9,435	11,853	10,087	8,437	6,073	5,070	6,269	5,484	6,341

Plurinational State of Bolivia, monthly farm-gate prices of sun-dried coca leaf, Chapare region (US$/kg), 1990-2009

Source: National Monitoring System supported by UNODC



Plurinational State of Bolivia, coca cultivation by region, 2005-2009



Source: Government of Bolivia - National monitoring system supported by UNODC
The boundaries and names shown and the designation used on this map do not imply official endorsement or acceptance by the United Nations

4.1.4 Colombia

Fact sheet – *Colombia Coca Survey 2009*[1]

	2008	Change on 2008	2009
Net coca cultivation (rounded total)	81,000 ha	-16%	68,000 ha
Of which Pacific region	*29,920 ha*	*-16%*	*25,170 ha*
Central region	*18,730 ha*	*-14%*	*16,130 ha*
Putumayo-Caquetá region	*13,960 ha*	*-35%*	*9,070 ha*
Meta-Guaviare region	*12,150 ha*	*+4%*	*12,620 ha*
Elsewhere	*6,200 ha*	*-19%*	*5,010 ha*
Potential production of cocaine[2]	450 mt	-9%	410 mt
Average farm-gate price of coca paste	US$963/kg COP 1,887,855/kg	-1% +8%	US$956/kg COP 2,047,970/kg
Average wholesale price of cocaine* (of unknown purity in major cities)	US$2,348/kg COP 4,580,000/kg	-9% 0%	US$2,147/kg COP 4,587,413/kg
Total farm-gate value of the production of coca leaf and its derivatives	US$623 million	-21%	US$494 million
in per cent of GDP[3] in per cent of agricultural sector	0.3% 3%		0.2% 3%
Reported aerial spraying of coca bush*	133,496 ha	-22%	104,772 ha
Reported manual eradication of coca bush*	95,634 ha	-37%	60,557 ha
Reported seizure of cocaine*	198 mt	+3%	203 mt
Reported destruction of coca processing laboratories*	3,443	-16%	2,888
Of which cocaine HCl processing lab.	*296*	*-7%*	*278*
Reported opium poppy cultivation*	394 ha	-40%	356 ha
Potential opium latex production** Potential heroin production (rounded) **	31 mt 1.3 mt	-16% -16%	26 mt 1.1 mt
Average farm-gate price of opium latex*	US$318/kg	+13%	US$358/kg
Average wholesale heroin price*	US$9,950/kg	+0.4%	US$9,993/kg
Reported seizure of heroin*	646 kg	+13%	732 kg

* As reported by the Government of Colombia.
** Own calculations based on regional yield figures and conversion ratios from US Government/DEA.

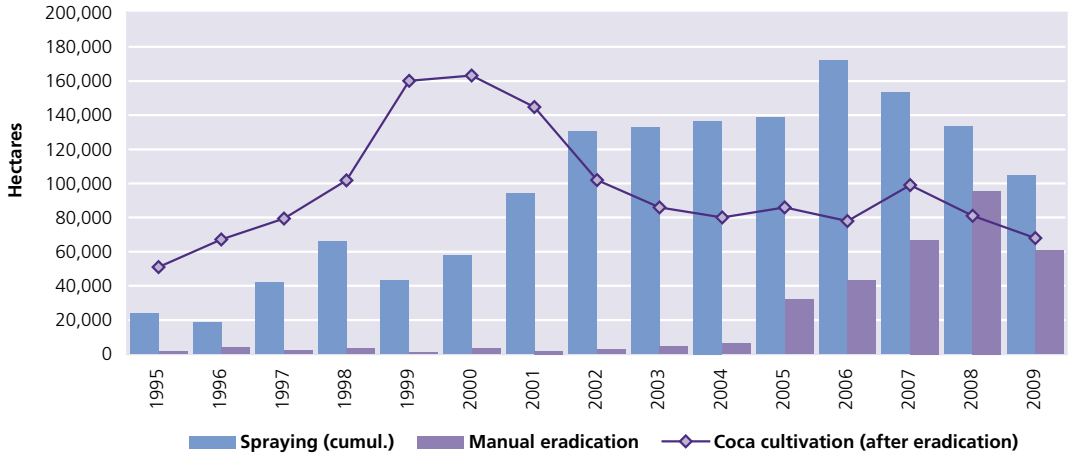
1 The information in this section comes from the report on Coca Cultivation in Colombia (UNODC/Government of Colombia, June 2010), and can also be found on the internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National monitoring system supported by UNODC.

2 The 2008 estimate of 430 mt was revised based on more detailed information on the average cocaine base purity (81%) and the cocaine base to HCl conversion ratio (1:1) available from the US Government/DEA.

3 GDP of the respective year as reported by the Government.

Colombia, coca cultivation and reported eradication/spraying (ha), 1995-2009

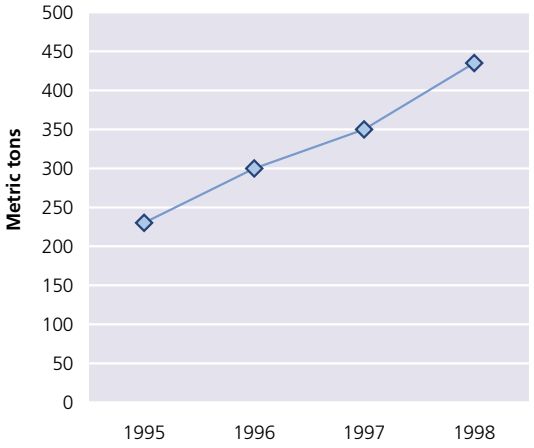
Sources: Cultivation: 1995-1998: CICAD and US Department of State, *International Narcotics Control Strategy Report*; since 1999: National Illicit Crop Monitoring System supported by UNODC; eradication/spraying: Government of Colombia



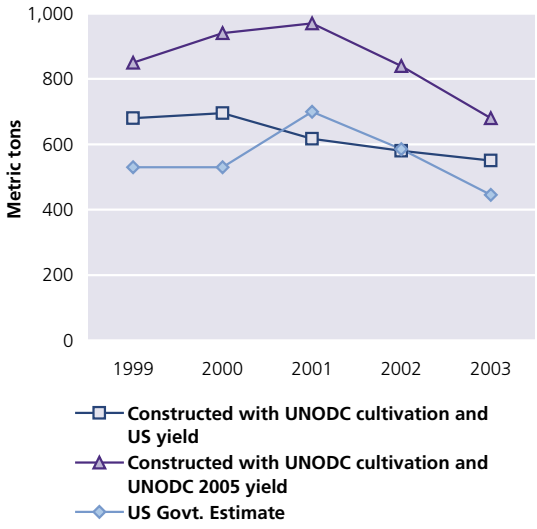
Potential manufacture of cocaine in Colombia[4]

Potential manufacture of cocaine in Colombia (mt), 1995-1998*

* Data sourced from US government estimates. UNODC did not have monitoring systems in place during the period 1995-1998.



Potential manufacture of cocaine in Colombia (mt), 1999-2003[5]

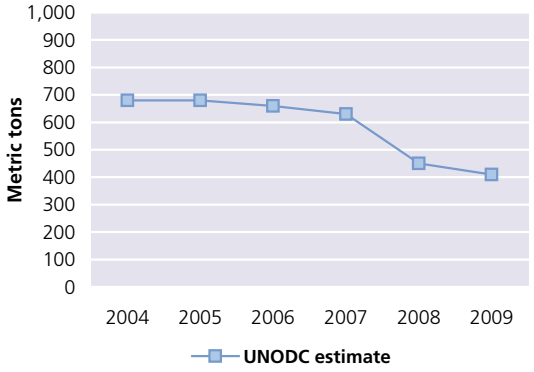


4 In past years, UNODC published a single graph with production data up to the latest year available emphasizing the break in series between 2003 and 2004. This year three graphs are published emphasizing the non-comparability of the data presented for three sets of years.

5 Over the period 1999-2003 UNODC monitored the coca cultivation in Colombia, but it did not carry out yield studies and therefore production figures comparable with the data after 2004 can not be calculated. Different figures for the years 1999-2003 can be calculated using different assumptions on the level of yield during these years. Utilizing UNODC cultivation data and a cocaine yield calculated from US estimates of coca cultivation and cocaine production produces the line labelled "Constructed with UNODC cultivation and US yield". The line labelled "US Government estimate" simply reports the cocaine production figures published by the United States, which are based on their own cultivation and yield estimates for Colombia. The line labelled "Constructed with UNODC cultivation and UNODC 2005 yield" was calculated utilizing UNODC cultivation data and a cocaine yield calculated through a linear interpolation of the cocaine yield reported by the Government of Colombia for 2000 (5.8 kg/ha) and the cocaine yield estimated by UNODC for 2005 (8.2 kg/ha). Although these estimates are not comparable with UNODC estimates for 2004 and later, the decrease over the period 2001-2003 was additional to the further decrease over the period 2004-2009.

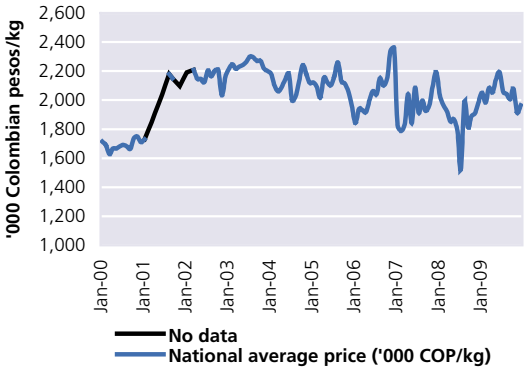
Potential manufacture of cocaine in Colombia (mt), 2004-2009

Data estimated on the basis of the cultivation census and the yield measurements regularly implemented by UNODC since 2004, as well as information on cocaine base purity and cocaine base to HCl conversion ratio from DEA.



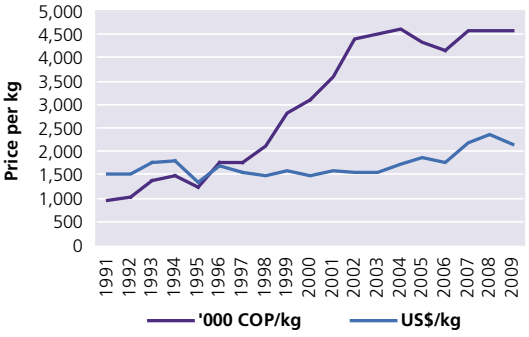
Colombia, monthly farm-gate price of coca paste, Jan. 2000 to Dec. 2009 ('000 COP/kg)

Source: National monitoring system supported by UNODC



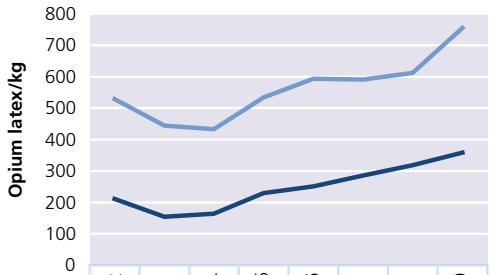
Colombia, annual average wholesale prices for cocaine HCl (US$/kg and '000 COP/kg), 1991-2009

Note: Nominal prices of cocaine of unknown purity in major cities of Colombia.
Source: DIRAN



Colombia, annual farm-gate prices for opium latex, 2002-2009

Note: Nominal prices.
Source: DIRAN

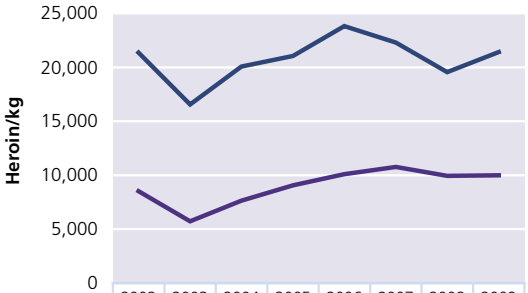


	2002	2003	2004	2005	2006	2007	2008	2009
Opium latex ('000 COP/kg)	529	444	433	534	593	591	612	754
Opium latex (US$/kg)	211	154	164	230	251	286	318	358

Opium latex ('000 COP/kg)
Opium latex (US$/kg)

Colombia, annual wholesale price of heroin, 2002-2009

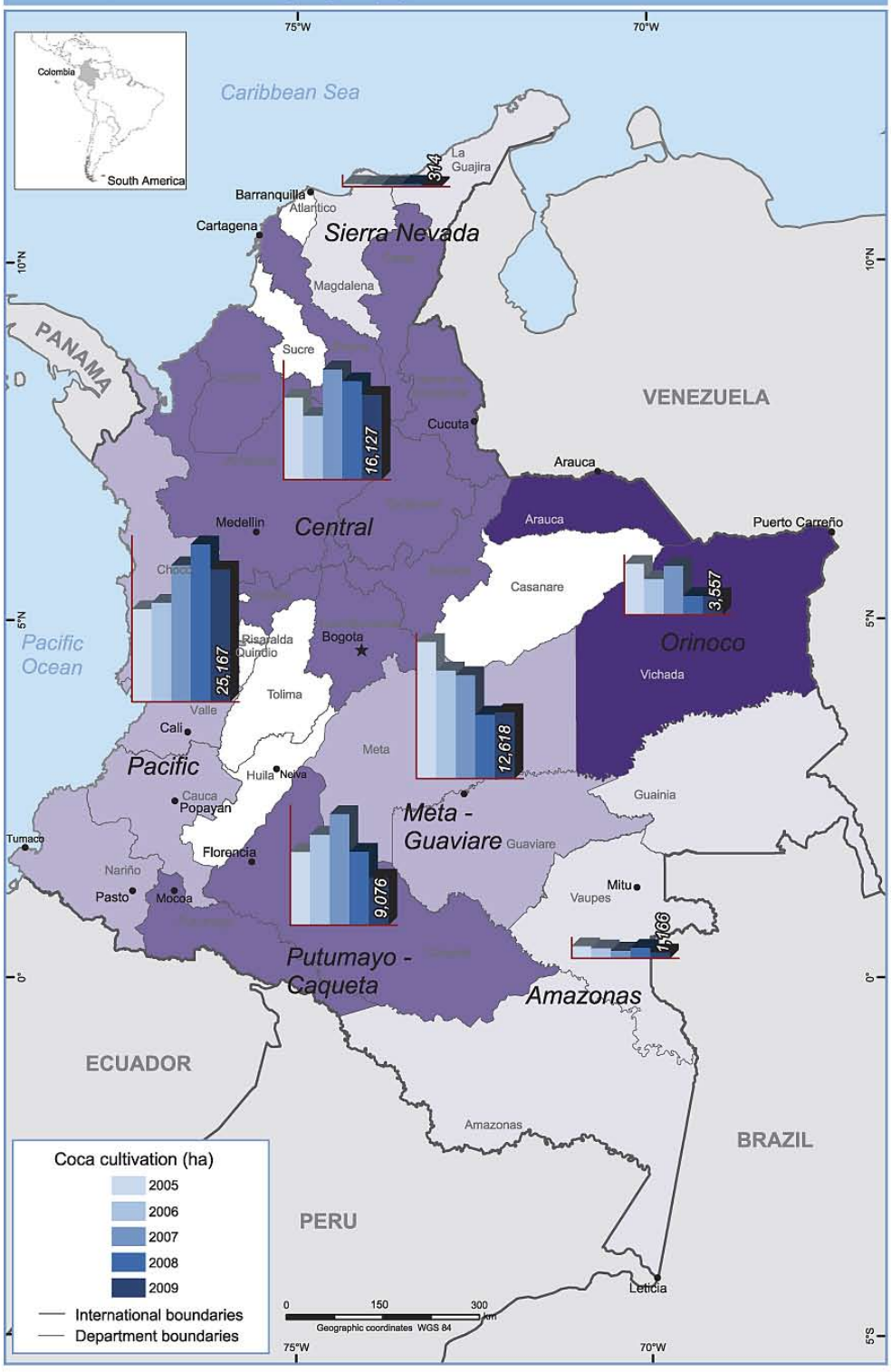
Note: Nominal prices for heroin of unknown purity.
Source: DIRAN.



	2002	2003	2004	2005	2006	2007	2008	2009
Heroin ('000 COP/kg)	21,370	16,561	20,067	21,051	23,822	22,294	19,560	21,422
Heroin (US$/kg)	8,520	5,740	7,635	9,070	10,103	10,780	9,950	9,993

Heroin ('000 COP/kg)
Heroin (US$/kg)

Colombia, coca cultivation by region (ha), 2005-2009



Source: Government of Colombia - National monitoring system supported by UNODC
The boundaries and names shown and the designations used in this map do not imply official endorsement or acceptance by the United Nations

4.1.5 Lao People's Democratic Republic

Fact sheet – *Lao People's Democratic Republic Opium Survey 2009*[1]

	2008	Change on 2008	2009
Opium poppy cultivation	1,600 ha (600-2,700 ha)	+18.8%	1,900 ha (900-3,000 ha)
Average dry opium yield[2]	6 kg/ha	-	6 kg/ha
Potential production of dry opium	9.6 mt (4.3-16.1 mt)	+18.8%	11.4 mt (5.4-18 mt)
Average retail/wholesale price of opium[3]	US$1,227/kg	+8%	US$1,327
Eradication[4]	575 ha	+13%	651 ha
Number of new opium addicts	4,906	-	n/a
Average drug prevalence rate (based on 7 northern provinces in 2008)	0.19%		n/a

Lao People's Democratic Republic, opium poppy cultivation* and eradication (ha), 2003-2009

* After eradication. Source: Cultivation: National monitoring system supported by UNODC; eradication: Government of Lao PDR

	2003	2004	2005	2006	2007	2008	2009
Cultivation	12,000	6,600	1,800	2,500	1,500	1,600	1,900
Eradication	4,134	3,556	2,575	1,518	779	575	651

1 The information in this section comes from the report on Opium Poppy Cultivation in South-East Asia (UNODC/Governments of Lao PDR and Myanmar December 2009), and can also be found on the internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National monitoring system supported by UNODC. Figures in brackets represent the upper and lower limits of the 90% confidence interval.

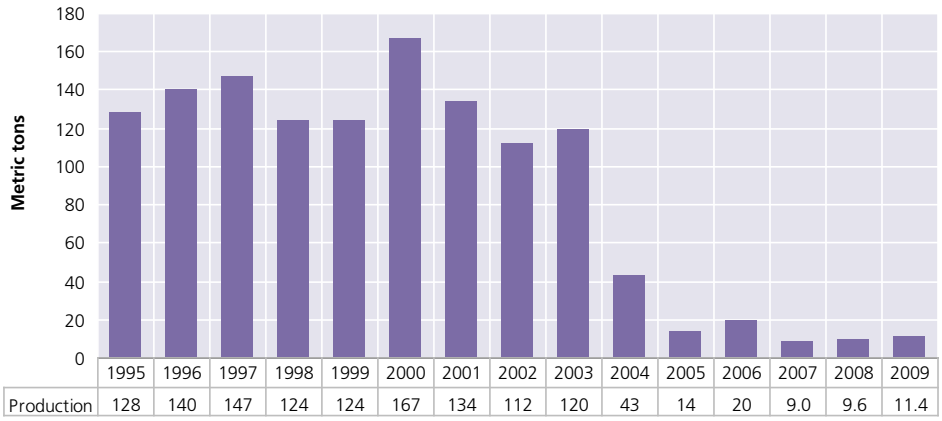
2 In the absence of a yield survey in2008 and 2009, the yield per hectare for 2007 was used.

3 Source: LCDC, Provincial authorities survey. Due to the limited market for opium, a clear distinction between farm gate, wholesale and retail prices could not be established.

4 Source: LCDC. Since 2008, eradication campaigns were conducted during and after the survey.

Lao People's Democratic Republic, potential opium production (mt), 1995-2009

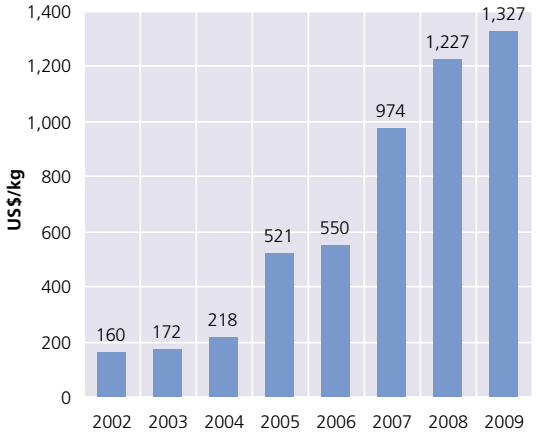
Source: National monitoring system supported by UNODC



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Production	128	140	147	124	124	167	134	112	120	43	14	20	9.0	9.6	11.4

Lao People's Democratic Republic, annual opium prices (US$/kg), 2002-2009

Source: LCDC, Provincial authorities survey



4.1.6 Myanmar

Fact sheet – *Myanmar Opium Survey 2009*[1]

	2008	Change on 2008	2009
Opium poppy cultivation in Myanmar	28,500 ha (17,900 to 37,000 ha)	+11%	31,700 ha (24,00 to 42,900 ha)
Of which in East Shan State	*9,300 ha*	*+25%*	*11,900 ha*
North Shan State	*800 ha*	*+100%*	*1,600 ha*
South Shan State	*15,500 ha*	*+10%*	*16,500 ha*
Elsewhere	*3,200 ha*	*-16%*	*1,700 ha*
Opium poppy cultivation in Shan State	25,300 ha	+19%	30,000 ha (24,000 to 40,000)
Average opium yield (weighted by area)	14.4 kg/ha	-27.8%	10.4 kg/ha
Potential production of dry opium in Myanmar (including the Shan State)	410 mt	-19.5%	330 mt (214 to 447)
Opium poppy eradication in Myanmar[2]	4,820 ha	-15.2%	4,087 ha
Average farm-gate price of opium[3]	US$301/kg	+5%	US$317/kg
Total potential farm-gate value of opium production[4]	US$123 million	-15%	US$105 million (68 to 142)
Estimated number of households involved in opium poppy cultivation in Myanmar	168,000	+14%	192,000 (160,000 to 225,000)
Number of persons involved in opium poppy cultivation in Myanmar	840,000	+27%	1,066,000 (890,000 to 1,250,000)
Estimated number of households involved in opium poppy cultivation in the Shan State	148,900	19%	176,500 (141,200 to 235,300)
Average yearly household income in opium producing households (Shan State)	US$687	+2%	US$700
Of which from opium sales	US$253	-37%	US$160
Per capita income in opium producing households (Shan State)	US$137	-9%	US$125
Household average yearly income in non-opium poppy producing households (Shan State)	US$721	+4%	US$750
Per capita income in non-opium producing households (Shan State)	US$144	-8%	US$133
Addiction prevalence rate in Shan State and Kachin (population aged 15 and above)	1.1%	+36%	1.5%

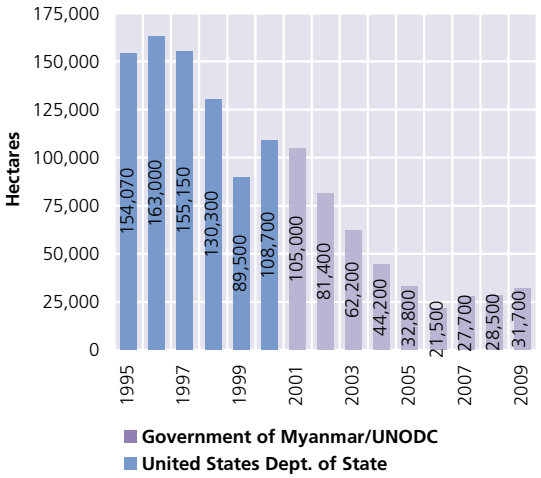
1 The information in this section comes from the report on Opium Poppy Cultivation in South East Asia (UNODC/Governments of Lao PDR and Myanmar, December 2009), and can also be found on the internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Figures in bracket refer to the upper and lower limits of the 95% confidence interval.

2 Source: CCDAC.

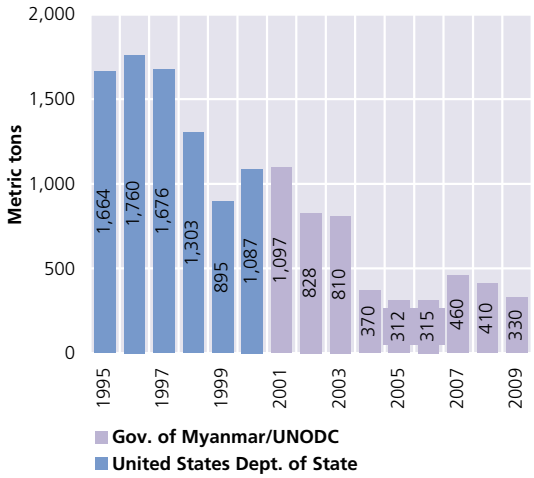
3 For 2008: yearly average price. For 2009: price at harvest time.

4 The farm-gate value should calculated with the price of dry opium. However, the price of dry opium is difficult to establish in Myanmar because of the selling and storing practices of the farmers. The farm-gate value here is calculated with the price of fresh opium. This result in a lower estimate.

Myanmar, opium poppy cultivation (ha), 1995-2009



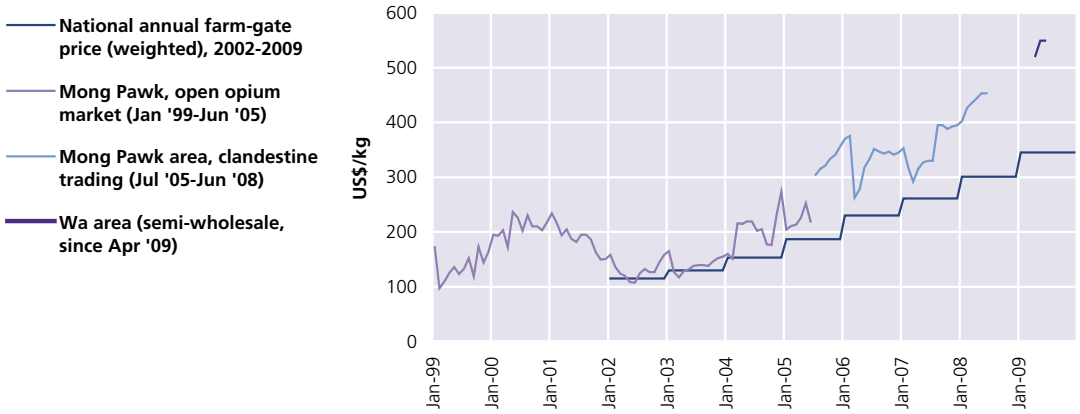
Myanmar, potential opium production (mt), 1995-2009



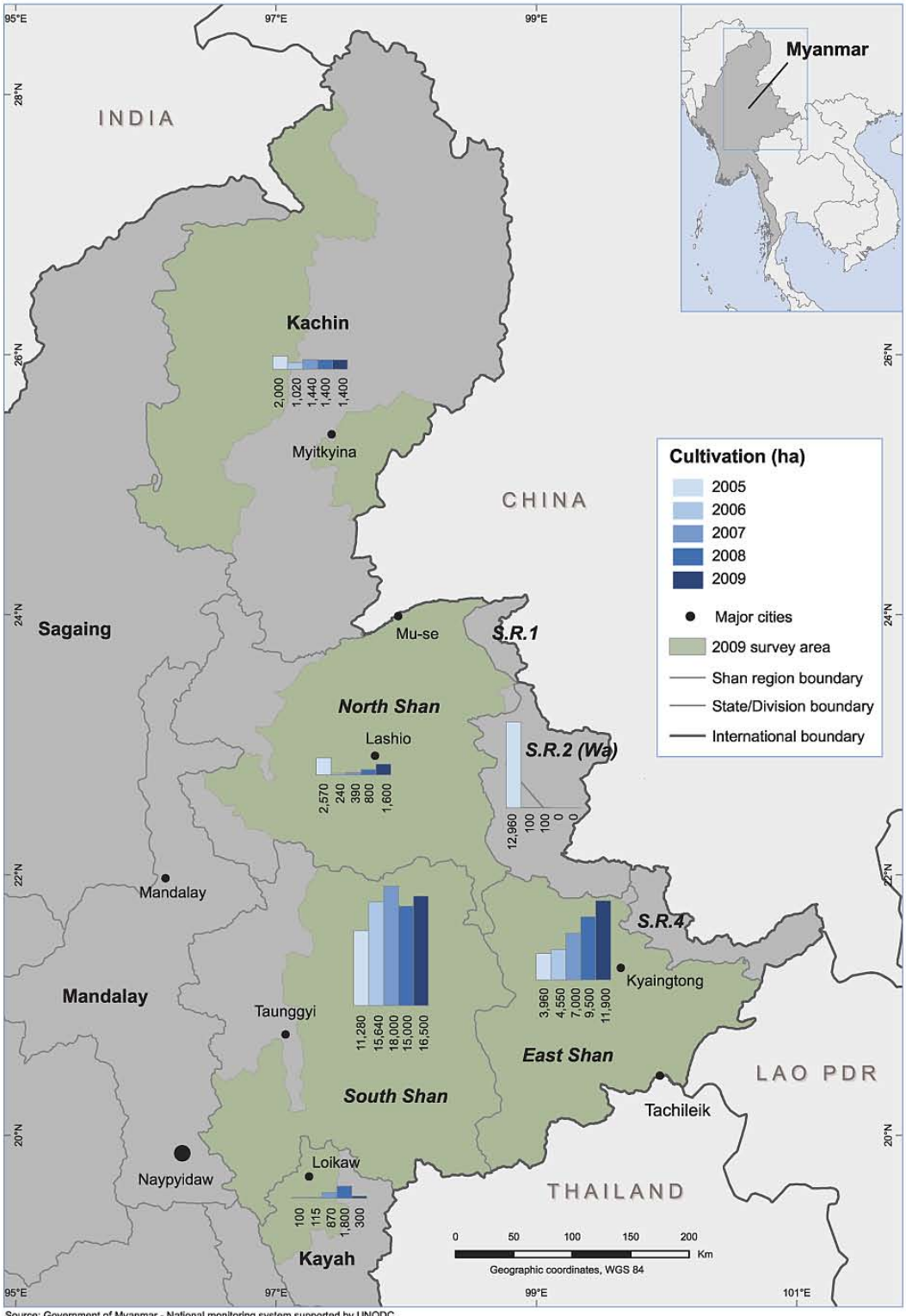
Opium poppy eradication reported by the Government of the Union of Myanmar (ha), 2002-2009

Region	2004	2005	2006	2007	2008	2009
East Shan	195	124	32	1,101	1,249	702
North Shan	172	1,211	76	916	932	546
South Shan	2,170	1,203	3,175	1,316	1,748	1,466
Shan State Total	**2,537**	**2,538**	**3,283**	**3,333**	**3,929**	**2,714**
Kachin	126	1,341	678	189	790	1,350
Kayah	83	8	0	12	12	14
Total within the surveyed area	**2,746**	**3,887**	**3,961**	**3,534**	**4,731**	**4,078**
Magwe	0	0	0	45	0	1
Chin	0	3	0	10	86	5
Mandalay	0	0	9	0	3	2
Sagaing	74	17	0	9	0	1
Other States	74	20	9	64	0	0
Total (national)	**2,820**	**3,907**	**3,970**	**3,598**	**4,820**	**4,087**

Myanmar, prices for dry opium (US$/kg), 1999-2009



Myanmar, opium poppy cultivation (ha), 2005-2009



Source: Government of Myanmar - National monitoring system supported by UNODC
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

4.1.7 Peru

Fact sheet – *Peru Coca Survey 2009*[1]

	2008	Change on 2008	2009
Coca cultivation	56,100 ha	+7%	59,900 ha
Of which in Alto Huallaga	*17,800 ha*	*-2%*	*17,500 ha*
Apurímac-Ene	*16,700 ha*	*+5%*	*17,500 ha*
La Convención-Lares	*13,100 ha*	*+1%*	*13,200 ha*
Elsewhere	*8,500 ha*	*+38%*	*11,700 ha*
Weighted average sun-dried coca leaf yield	2,200 kg/ha	-5%	2,100 kg/ha
Potential production of sun-dried coca leaf[2]	122,300 mt	+5%	128,000 mt
Potential production of sun-dried coca leaf available for cocaine production	113,300 mt	+5%	119,000 mt
Potential production of cocaine HCl	302 mt		n.a.**
Average farm-gate price of sun-dried coca leaf	US$3.4/kg	-6%	US$3.2/kg
Average farm-gate price of sun-dried coca leaf (weighted)[3]	US$3.1/kg	-3%	US$3.0/kg
Average farm-gate price of coca paste	US$723/kg	+7%	US$778/kg
Average price of cocaine HCl in coca cultivating regions	US$940/kg	+9%	US$1,021/kg
Potential farm-gate value of sun-dried coca leaf[4]	US$379 million	+1%	US$384 million
Reported eradication of coca cultivation*	10,143 ha	-1%	10,025 ha
Reported seizure of sun-dried coca leaves*	2,132 mt	-52%	1,031 mt
Reported seizure of coca paste*	11,374 kg	-16%	9,914 kg
Reported seizure of cocaine HCl*	16,203 kg	-34%	10,744 kg
Reported destruction of coca laboratories[5]*	1,224	+1%	1,242
Of which cocaine HCl processing laboratories	*19*	*+32%*	*25*
Reported seizure of opium latex*	128 kg		n.a.

* As reported by the Government of Peru.

** Conversion rates from coca leaf to cocaine are currently being reviewed. This may lead to a revision of the 2008 figure (and of previous years). An estimate of the 2009 potential cocaine production in Peru was not available at the time of printing of this report.

1 The information in this section comes from the report on Coca Cultivation in Peru (UNODC/Government of Peru, June 2010), and can also be found on the Internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National monitoring system supported by UNODC.

2 Includes all coca leaf potentially produced. For the calculation of coca leaf available for cocaine production, 9,000 mt of sun-dried coca leaf were deducted from this figure, which, according to Government sources, is the amount used for traditional purposes.

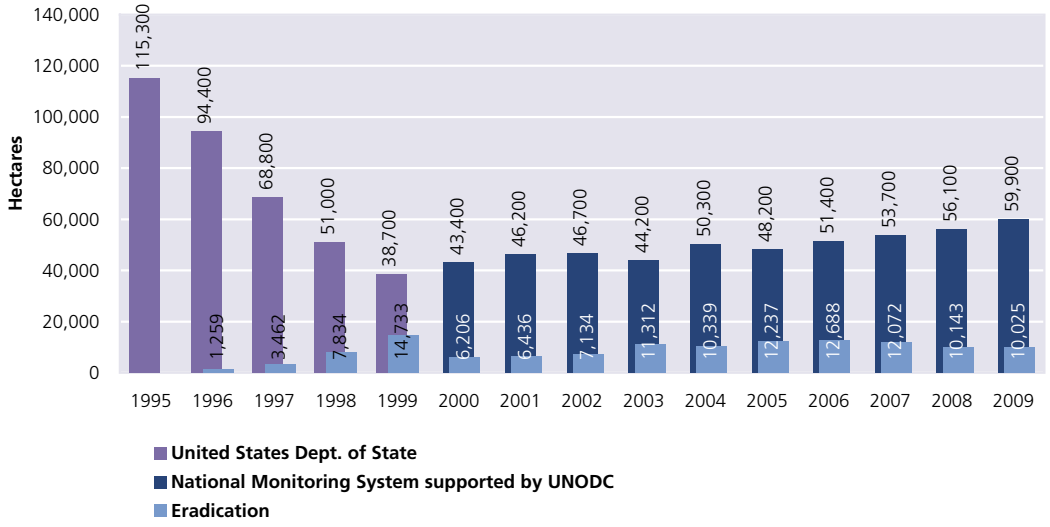
3 The weighted average price takes into account that different amounts of coca leaf are sold in different regions at different price levels.

4 Takes into account all coca leaf produced, irrespective of its use. For the calculation, the weighted average coca leaf price was used.

5 Excluding coca leaf macerations pits.

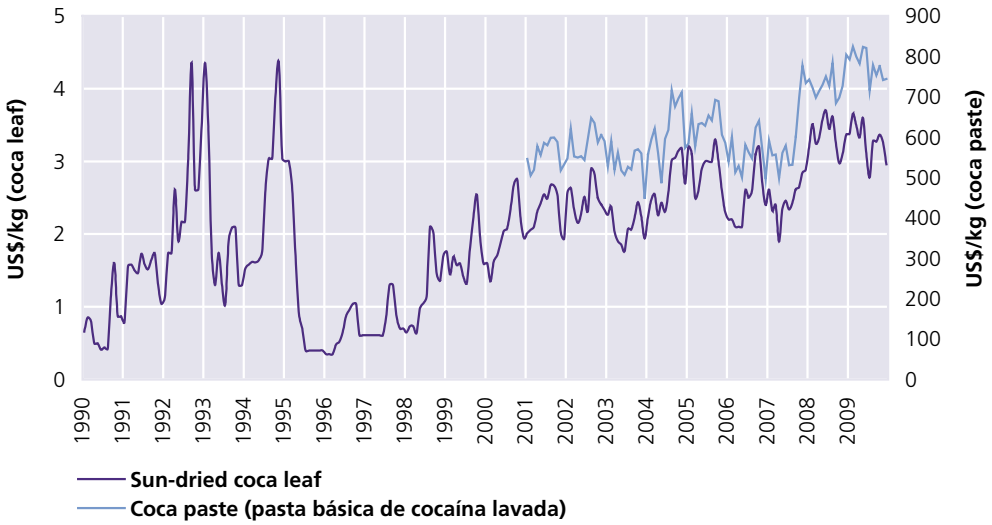
Peru, coca cultivation (ha), 1995-2009

Source (eradication): CORAH and DEVIDA. Includes forced and voluntary eradication

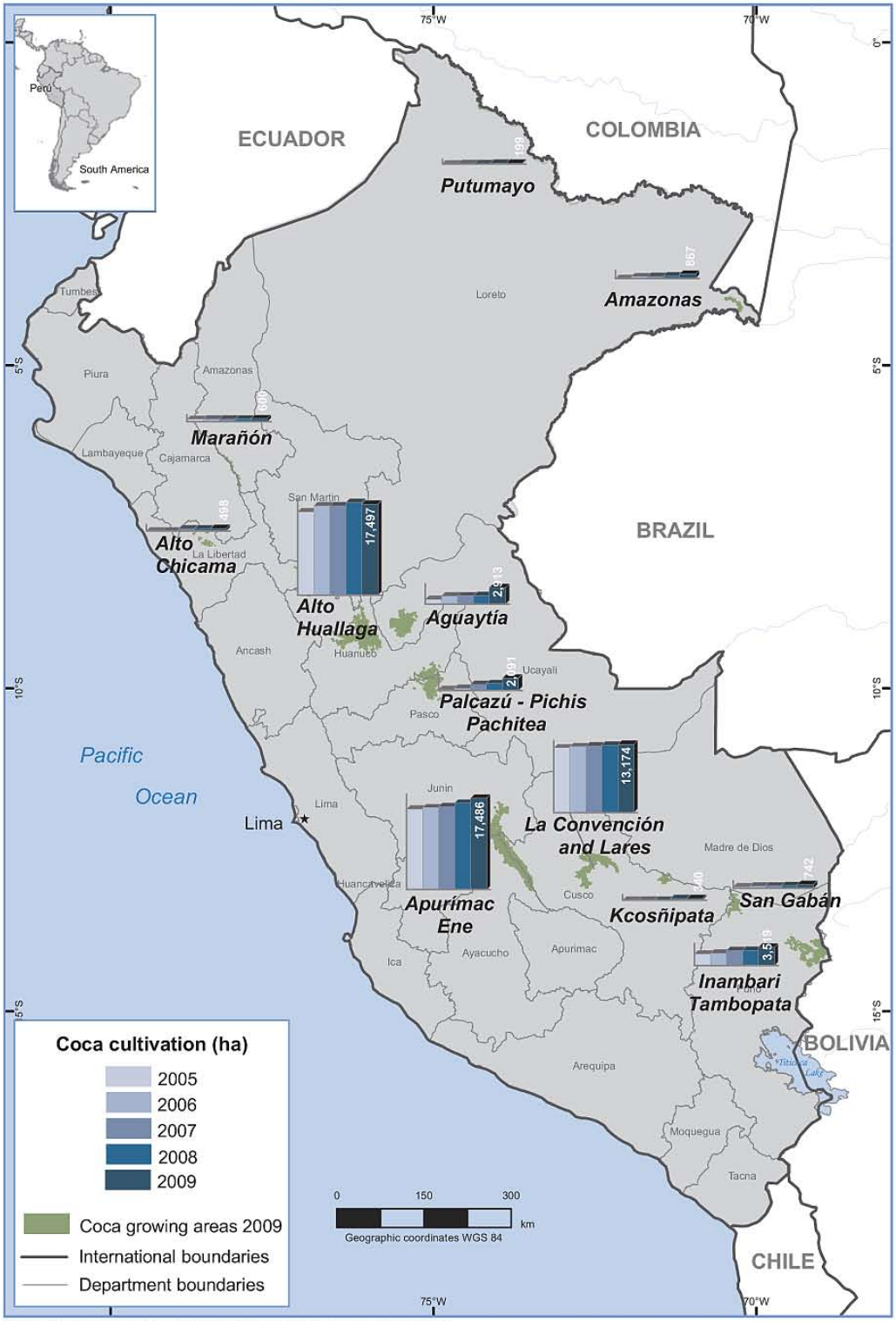


Peru, monthly farm-gate prices of sun-dried coca leaf and coca paste (US$/kg), 1990-2009

Source: UNODC, National monitoring system supported by UNODC



Peru, coca cultivation by region, 2005-2009



Source: Government of Peru - National monitoring system supported by UNODC.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by United Nations.

4.2 Consumption

4.2.1 Annual prevalence

4.2.1.1 Opiates

OPIATES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
AFRICA							
East Africa							
Burundi					No recent, reliable estimate located		
Comoros					No recent, reliable estimate located		
Djibouti					No recent, reliable estimate located		
Eritrea					No recent, reliable estimate located		
Ethiopia					No recent, reliable estimate located		
Kenya	0.73	0.16 - 1.30	15 - 64	2004	Reference Group to the UN on HIV	I	c, i
Madagascar					No recent, reliable estimate located		
Mauritius	1.95		15 - 54	2007	ARQ	I	
Rwanda	0.14		15 - 64	2004	Cure Research estimate		
Seychelles					No recent, reliable estimate located		
Somalia	0.16		15 - 64	2004	Cure Research estimate		
Tanzania (United Republic of)					No recent, reliable estimate located		
Uganda	0.05		15 - 64	2004	Cure Research estimate		
North Africa							
Algeria	0.12		15 - 64	2004	UNODC Estimate		
Egypt	0.44	0.14 - 0.73	15 - 64	2006	Govt; Academic Research	HHS, SS	a, d
Libyan Arab Jamahiriya	0.14		15 - 64	2004	UNODC Estimate		
Morocco	0.02		15 - 64	2003	ARQ		
Sudan					No recent, reliable estimate located		
Tunisia	0.09		15 - 64	2006	UNODC Estimate		
Southern Africa							
Angola	0.25		15 - 64	2001	UNODC Estimate		
Botswana					No recent, reliable estimate located		
Lesotho					No recent, reliable estimate located		
Malawi					No recent, reliable estimate located		
Mozambique					No recent, reliable estimate located		
Namibia					No recent, reliable estimate located		
South Africa	0.38	0.35 - 0.39	15 - 64	2005	ARQ/ Reference Group to the UN on	SS, I	d,e,g,i
Swaziland	0.17		15 - 64	2004	Cure Research estimate		
Zambia	0.37		15 - 64	2003	UNODC Estimate		
Zimbabwe	0.04		15 - 64	2004	Cure Research estimate		
West and Central Africa							
Benin					No recent, reliable estimate located		
Burkina Faso					No recent, reliable estimate located		
Cameroon					No recent, reliable estimate located		
Cape Verde	0.18		15 - 64	2004	UNODC Estimate		
Central African Republic	0.05		15 - 64	2004	Cure Research estimate		
Chad	0.22		15 - 64	2004	Cure Research estimate		
Congo	0.17		15 - 64	2004	Cure Research estimate		
Congo (Dem. Rep. of the)	0.13		15 - 64	2004	Cure Research estimate		
Côte d'Ivoire					No recent, reliable estimate located		
Equatorial Guinea					No recent, reliable estimate located		
Gabon					No recent, reliable estimate located		
Gambia					No recent, reliable estimate located		
Ghana	0.14		15 - 65	2004	Cure Research estimate		
Guinea					No recent, reliable estimate located		
Guinea-Bissau					No recent, reliable estimate located		
Liberia	0.17		15 - 64	2004	Cure Research estimate		
Mali					No recent, reliable estimate located		
Mauritania					No recent, reliable estimate located		
Niger	0.20		15 - 64	2004	Reference Group to the UN on HIV	I	
Nigeria					No recent, reliable estimate located		
Saint Helena					No recent, reliable estimate located		
Sao Tome and Principe					No recent, reliable estimate located		
Senegal	0.08		15 - 64	2006	UNODC Estimate	SS	a, d, e

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

OPIATES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Sierra Leone	0.17		15 - 64	2004	Cure Research estimate		
Togo					No recent, reliable estimate located		
AMERICAS							
Caribbean							
Anguilla					No recent, reliable estimate located		
Antigua and Barbuda	0.05		15 - 64	2000	ARQ		
Bahamas	0.22		15 - 64	2003	UNODC Estimate		
Barbados	0.13		15 - 64	2006	UNODC Estimate		
Bermuda					No recent, reliable estimate located		
British Virgin Islands					No recent, reliable estimate located		
Cayman Islands					No recent, reliable estimate located		
Cuba					No recent, reliable estimate located		
Dominica					No recent, reliable estimate located		
Dominican Republic	0.14		15 - 64	2001	UNODC Estimate		
Grenada					No recent, reliable estimate located		
Haiti	0.20	0.19 - 0.22	15 - 64	2006	ARQ	SS	a, d, e
Jamaica	0.10		15 - 64	2001	UNODC Estimate		
Montserrat					No recent, reliable estimate located		
Netherlands Antilles					No recent, reliable estimate located		
Puerto Rico	1.15		15 - 64	2002	Reference Group to the UN on HIV	I	
Saint Kitts and Nevis					No recent, reliable estimate located		
Saint Lucia					No recent, reliable estimate located		
Saint Vincent and the Grenadines					No recent, reliable estimate located		
Trinidad and Tobago	0.09		15 - 64	2002	UNODC Estimate		
Turks and Caicos Islands	0.07		15 - 64	2002	UNODC Estimate		
United States Virgin Islands					No recent, reliable estimate located		
Central America							
Belize					No recent, reliable estimate located		
Costa Rica	2.70		12 - 70	2006	ARQ	HHS	
El Salvador	0.14		15 - 64	2005	UNODC Estimate	HHS	e
Guatemala	0.04		15 - 64	2005	ARQ		
Honduras	0.15		15 - 64	2005	UNODC Estimate	HHS	e
Nicaragua					No recent, reliable estimate located		
Panama					No recent, reliable estimate located		
North America							
Canada	0.50		15 - 64	2008	Govt. source (CADUMS)	HHS, x	
Mexico	0.08	0.04 - 0.10	15 - 64	2008	ARQ	HHS	
Saint Pierre and Miquelon					No recent, reliable estimate located		
United States of America	0.58		15 - 64	2000	Govt. source (ONDCP)	I	
South America							
Argentina	0.16		15 - 64	2005	UNODC Estimate		e
Bolivia (Plurinational State of)	0.30		12 - 65	2007	ARQ	HHS	e
Brazil	0.50		15 - 64	2005	ARQ	HHS	e
Chile	0.50		15 - 64	2008	HHS	HHS	
Colombia	0.10		15 - 64	2004	UNODC Estimate		
Ecuador	0.12		15 - 64	2005	UNODC Estimate		e
Falkland Islands (Malvinas)					No recent, reliable estimate located		
Guyana	0.25		15 - 64	2002	UNODC Estimate		
Paraguay	0.03		12 - 65	2003	ARQ	HHS	e
Peru	0.18		12 - 64	2005	UNODC Estimate		
Suriname	0.08		15 - 64	2002	UNODC Estimate		e
Uruguay	0.08		15 - 64	2006	ARQ	HHS	e
Venezuela (Bolivarian Republic of)	0.10	0.03 - 0.16	15 - 64	2003	ARQ	SS	a, d, e
ASIA							
Central Asia and Transcaucasian countries							
Armenia	0.30		15 - 64	2005	ARQ	HHS	
Azerbaijan	0.20		15 - 64	2008	ARQ		i

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

OPIATES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Georgia	0.58		15 - 64	2006	UNODC Estimate		
Kazakhstan	1.00		15 - 64	2006	UNODC (GAP survey)		i
Kyrgyzstan	0.80		15 - 64	2006	UNODC (GAP survey)		i
Tajikistan	0.54		15 - 64	2006	UNODC (GAP survey)		i
Turkmenistan	0.32		15 - 64	2007	ARQ		
Uzbekistan	0.80		15 - 64	2006	UNODC (GAP survey)		i
East and South-East Asia							
Brunei Darussalam					No recent, reliable estimate located		
Cambodia	0.03	0.01 - 0.09	15 - 64	2004	INCSR/ Reference Group to the UN	I	
China	0.25	0.19 - 0.31	15 - 64	2005	Academic research/ Reference Group	I	
China, Hong Kong SAR	0.20		15 - 64	2006	ARQ		
China, Macao SAR	1.12		15 - 64	2003	ARQ		
Guam					No recent, reliable estimate located		
Indonesia	0.16		15 - 64	2005	ARQ		
Japan					No recent, reliable estimate located		
Korea (Dem. People's Rep.)					No recent, reliable estimate located		
Korea (Republic of)	0.08	0.06 - 0.10	15 - 64	2004	ARQ	HHS	a,e
Lao People's Democratic Republic	0.37		15 - 64	2008	UNODC (ICMP)	HHS	a, c
Malaysia	1.33	1.11 - 1.56	15 - 64	2002	Reference Group to the UN on HIV	I	
Mongolia					No recent, reliable estimate located		
Myanmar	0.60		15 - 64	2008	UNODC (ICMP)	HHS	a,c
Philippines	0.05		15 - 64	2005	Reference Group to the UN on HIV		
Singapore	0.01		15 - 64	2006	ARQ	R	
Taiwan, Province of China	0.20		15 - 64	2005	Government source		
Thailand	0.20		15 - 64	2007	ARQ	HHS	
Timor-Leste					No recent, reliable estimate located		
Viet Nam	0.27	0.25 - 0.28	15 - 64	2005	INCSR/ Reference Group to the UN		
Near and Middle East /South-West Asia							
Afghanistan	2.65	2.34 - 2.96	15 - 64	2009	UNODC/ Govt. Source	HHS	
Bahrain					No recent, reliable estimate located		
Iran (Islamic Republic of)	2.80	1.50 - 3.20	15 - 64	1999	UNODC Estimate		
Iraq					No recent, reliable estimate located		
Israel	0.50		18 - 40	2005	ARQ		
Jordan	0.17		15 - 64	2001	UNODC Estimate		
Kuwait	0.17		15 - 64	2004	UNODC Estimate		
Lebanon	0.20		15 - 64	2003	ARQ		
Occupied Palestinian Territory					No recent, reliable estimate located		
Oman	0.09		15 - 64	1999	UNODC Estimate		
Pakistan	0.70		15 - 64	2006	UNODC (GAP survey)		
Qatar					No recent, reliable estimate located		
Saudi Arabia	0.06		15 - 64	2006	UNODC Estimate		
Syrian Arab Republic	0.02		15 - 64	2005	UNODC Estimate		
United Arab Emirates	0.02		15 - 64	2004	UNODC Estimate		
Yemen					No recent, reliable estimate located		
South Asia							
Bangladesh	0.40		15 - 64	2003	ARQ	HHS	a, e
Bhutan					No recent, reliable estimate located		
India					No recent, reliable estimate located		
Maldives					No recent, reliable estimate located		
Nepal	0.24	0.18 - 0.29	15 - 64	2006	Government source	I, b	
Sri Lanka	0.11		15 - 64	2006	ARQ		
EUROPE							
East Europe							
Belarus	0.43	0.08 - 0.74	15 - 64	2007	UNODC Estimate	R	h,g
Moldova (Republic of)	0.15	0.12 - 0.17	15 - 64	2008	Government source	R, HHS	e
Russian Federation*	1.64		15 - 64	2007	ARQ		g
Ukraine	1.16	1.00 - 1.31	15 - 64	2006	Reference Group to the UN on HIV	I	

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

OPIATES Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)							
Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Southeast Europe							
Albania	0.45		15 - 64	2007	ARQ	R	h,g
Bosnia and Herzegovina	0.30		15 - 64	2005	Reference Group to the UN on HIV	I	
Bulgaria	0.49	0.38 - 0.60	15 - 64	2007	ARQ	I	
Croatia	0.36		15 - 64	2006	ARQ	I	
Macedonia (TFYR)	0.50		15 - 64	2005	ARQ		
Montenegro					No recent, reliable estimate located		
Romania	0.16	0.11 - 0.21	15 - 64	2004	ARQ	I	
Serbia	0.28	0.18 - 0.38	15 - 64	2008	ARQ	I	
Turkey	0.05		15 - 64	2003	Government source		
West & Central Europe							
Andorra					No recent, reliable estimate located		
Austria	0.43		15 - 64	2007	ARQ	I	
Belgium					No recent, reliable estimate located		
Cyprus	0.27	0.21 - 0.36	15 - 64	2007	ARQ	I	
Czech Republic	0.40		15 - 64	2008	Government source	HHS	
Denmark	0.60		15 - 64	2005	ARQ	I	
Estonia	1.52	0.89 - 3.79	15 - 64	2004	ARQ	I	
Finland	0.23		15 - 64	2005	UNODC Estimate	I	
France	0.47	0.42 - 0.51	15 - 64	2007	Government source	I	
Germany	0.21	0.15 - 0.27	15 - 64	2007	EMCDDA	I	
Greece	0.27	0.24 - 0.31	15 - 64	2007	EMCDDA	I	
Hungary	0.10	0.04 - 0.20	18 - 64	2007	Government source	HHS	g
Iceland	0.40		15 - 64	2005	ARQ		
Ireland	0.50		15 - 64	2001	ARQ	I	
Italy	0.72	0.63 - 0.81	15 - 64	2008	ARQ	I	
Latvia	0.75	0.70 - 0.80	15 - 64	2007	ARQ	HHS	
Liechtenstein	0.20		15 - 64	2005	ARQ	SS	
Lithuania	0.10		15 - 64	2008	Government source	HHS	
Luxembourg	0.93		15 - 64	2000	EMCDDA	I	
Malta	0.57	0.54 - 0.59	15 - 64	2007	ARQ	I	
Monaco					No recent, reliable estimate located		
Netherlands	0.31		15 - 64	2005	ARQ		
Norway	0.30	0.21 - 0.39	15 - 64	2008	Government source	I	
Poland	0.10	0.09 - 0.11	15 - 64	2005	ARQ	I	
Portugal	0.46	0.43 - 0.50	15 - 64	2005	ARQ	I	
San Marino					No recent, reliable estimate located		
Slovakia	0.25	0.18 - 0.49	15 - 64	2007	EMCDDA	I	
Slovenia	0.74	0.66 - 0.92	15 - 64	2004	ARQ	I	g
Spain	0.13	0.12 - 0.14	15 - 64	2007	Government source	I	
Sweden	0.17		15 - 64	2004	ARQ	I	
Switzerland	0.61	0.51 - 0.78	15 - 64	2000	Government source	I	
United Kingdom					No recent, reliable estimate located		
United Kingdom (England and Wales)	0.81	0.79 - 0.84	15 - 64	2007	EMCDDA	I	
United Kingdom (Northern Ireland)	0.10		16 - 59	2006	Government source		
United Kingdom (Scotland)	1.54	1.54 - 1.68	15 - 64	2004	EMCDDA	I	
OCEANIA							
Oceania							
American Samoa					No recent, reliable estimate located		
Australia	0.40		15 - 64	2007	ARQ	HHS	a
Christmas Islands					No recent, reliable estimate located		
Cocos (Keeling) Islands					No recent, reliable estimate located		
Cook Islands					No recent, reliable estimate located		
Fiji					No recent, reliable estimate located		
French Polynesia					No recent, reliable estimate located		
Kiribati					No recent, reliable estimate located		
Marshall Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

OPIATES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Micronesia (Federated States of)					No recent, reliable estimate located		
Nauru					No recent, reliable estimate located		
New Caledonia					No recent, reliable estimate located		
New Zealand	1.10		16 - 64	2008	Government source	HHS, x	
Norfolk Island					No recent, reliable estimate located		
Northern Mariana Islands					No recent, reliable estimate located		
Palau					No recent, reliable estimate located		
Papua New Guinea					No recent, reliable estimate located		
Pitcairn					No recent, reliable estimate located		
Samoa					No recent, reliable estimate located		
Solomon Islands					No recent, reliable estimate located		
Tonga					No recent, reliable estimate located		
Tuvalu					No recent, reliable estimate located		
Vanuatu					No recent, reliable estimate located		
Wallis and Futuna Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

4.2.1.2 Cocaine

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
AFRICA							
East Africa							
Burundi					No recent, reliable estimate located		
Comoros					No recent, reliable estimate located		
Djibouti					No recent, reliable estimate located		
Eritrea					No recent, reliable estimate located		
Ethiopia					No recent, reliable estimate located		
Kenya					No recent, reliable estimate located		
Madagascar					No recent, reliable estimate located		
Mauritius					No recent, reliable estimate located		
Rwanda					No recent, reliable estimate located		
Seychelles					No recent, reliable estimate located		
Somalia					No recent, reliable estimate located		
Tanzania (United Republic of)					No recent, reliable estimate located		
Uganda					No recent, reliable estimate located		
North Africa							
Algeria					No recent, reliable estimate located		
Egypt	<0.1		15 - 64	2006	Govt; Academic Research	HHS, SS	a, d
Libyan Arab Jamahiriya					No recent, reliable estimate located		
Morocco	<0.1		15 - 64	2004	ARQ		
Sudan					No recent, reliable estimate located		
Tunisia					No recent, reliable estimate located		
Southern Africa							
Angola	0.1		15 - 64	1999	UNODC Estimate		e
Botswana					No recent, reliable estimate located		
Lesotho					No recent, reliable estimate located		
Malawi					No recent, reliable estimate located		
Mozambique					No recent, reliable estimate located		
Namibia					No recent, reliable estimate located		
South Africa	0.8	0.6 - 1.2	15 - 64	2008	ARQ	HHS	a, e
Swaziland					No recent, reliable estimate located		
Zambia	0.2		15 - 64	2000	UNODC Estimate		
Zimbabwe	0.1		15 - 64	2000	UNODC Estimate		
West and Central Africa							
Benin					No recent, reliable estimate located		
Burkina Faso					No recent, reliable estimate located		
Cameroon					No recent, reliable estimate located		
Cape Verde	0.2		15 - 64	2004	UNODC Estimate		d, e
Central African Republic					No recent, reliable estimate located		
Chad					No recent, reliable estimate located		
Congo					No recent, reliable estimate located		
Congo (Dem. Rep. of the)					No recent, reliable estimate located		
Côte d'Ivoire					No recent, reliable estimate located		
Equatorial Guinea					No recent, reliable estimate located		
Gabon					No recent, reliable estimate located		
Gambia					No recent, reliable estimate located		
Ghana					No recent, reliable estimate located		
Guinea					No recent, reliable estimate located		
Guinea-Bissau					No recent, reliable estimate located		
Liberia					No recent, reliable estimate located		
Mali					No recent, reliable estimate located		
Mauritania					No recent, reliable estimate located		
Niger					No recent, reliable estimate located		
Nigeria	0.5		15 - 64	1999	UNODC Estimate		
Saint Helena					No recent, reliable estimate located		
Sao Tome and Principe					No recent, reliable estimate located		
Senegal					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Sierra Leone					No recent, reliable estimate located		
Togo					No recent, reliable estimate located		
AMERICAS							
Caribbean							
Anguilla					No recent, reliable estimate located		
Antigua and Barbuda	0.9	0.3 - 1.6	15 - 64	2005	Government source	SS	d, e
Bahamas	0.2	<0.1 - 0.3	15 - 64	2008	ARQ	SS	d, e
Barbados	0.4		15 - 64	2006	CICAD	HHS	
Bermuda					No recent, reliable estimate located		
British Virgin Islands					No recent, reliable estimate located		
Cayman Islands	0.6		15 - 64	2000	UNODC Estimate		
Cuba					No recent, reliable estimate located		
Dominica					No recent, reliable estimate located		
Dominican Republic	0.3	0.1 - 0.6	15 - 64	2008	ARQ	SS	d, e
Grenada	0.9	0.2 - 1.9	15 - 64	2005	CICAD	SS	d, e
Haiti	0.9		15 - 64	2005	UNODC Estimate		
Jamaica	1.1		15 - 64	2006	UNODC Estimate	SS	a, d
Montserrat					No recent, reliable estimate located		
Netherlands Antilles					No recent, reliable estimate located		
Puerto Rico	0.8	0.3 - 1.4	15 - 64	2005	Government source	SS	d, e
Saint Kitts and Nevis	1.7	0.4 - 3.2	15 - 64	2006	Government source	SS	d, e
Saint Lucia	1.0		15 - 64	2002	UNODC Estimate		
Saint Vincent and the Grenadines	0.7		15 - 64	2002	UNODC Estimate	SS	
Trinidad and Tobago					No recent, reliable estimate located		
Turks and Caicos Islands	0.7		15 - 64	2002	UNODC Estimate		
United States Virgin Islands					No recent, reliable estimate located		
Central America							
Belize	0.9		12 - 65	2005	CICAD	HHS	
Costa Rica	0.4		12 - 70	2006	ARQ	HHS	
El Salvador	0.4	0.2 - 0.5	12 - 65	2005	CICAD	HHS	
Guatemala	0.2		15 - 64	2005	ARQ	HHS	
Honduras	0.9		12 - 35	2005	ARQ		
Nicaragua	0.7	0.5 - 0.9	12 - 65	2006	CICAD	HHS, c	
Panama	1.2		12 - 65	2003	Government source	HHS	
North America							
Canada	1.9		15 - 64	2008	ARQ	HHS	
Mexico	0.4		12 - 65	2008	Govt. source (ENA)	HHS	
Saint Pierre and Miquelon					No recent, reliable estimate located		
United States of America	2.6		15 - 64	2008	Govt. source (SAMSHA)	HHS	
South America							
Argentina	2.6		15 - 64	2006	UNODC/ CICAD	HHS, a, c	
Bolivia (Plurinational State of)	0.8		15 - 64	2007	UNODC/ CICAD	HHS, a, c	
Brazil	0.7		12 - 65	2005	Government source	HHS, c	
Chile	2.4		15 - 64	2008	ARQ	HHS	
Colombia	0.8	0.7 - 0.9	12 - 65	2008	Government source	HHS, c	
Ecuador	0.3		15 - 64	2007	UNODC/ CICAD	HHS, a, c	
Falkland Islands (Malvinas)					No recent, reliable estimate located		
Guyana					No recent, reliable estimate located		
Paraguay	0.3	0.2 - 0.3	12 - 64	2003	CICAD	HHS	
Peru	0.5	0.3 - 0.6	12 - 64	2006	ARQ	HHS, c	
Suriname	0.3		12 - 65	2007	Government source	HHS	
Uruguay	1.4		12 - 65	2006	UNODC/ CICAD	HHS, a, c	
Venezuela (Bolivarian Republic of)	0.6		15 - 64	2005	Government source	HHS	
ASIA							
Central Asia and Transcaucasian countries							
Armenia	0.1		15 - 64	2005	UNODC Estimate	HHS	
Azerbaijan					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Georgia					No recent, reliable estimate located		
Kazakhstan					No recent, reliable estimate located		
Kyrgyzstan					No recent, reliable estimate located		
Tajikistan					No recent, reliable estimate located		
Turkmenistan					No recent, reliable estimate located		
Uzbekistan					No recent, reliable estimate located		
East and South-East Asia							
Brunei Darussalam					No recent, reliable estimate located		
Cambodia					No recent, reliable estimate located		
China					No recent, reliable estimate located		
China, Hong Kong SAR	0.3	0.2 - 0.3	15 - 64	2008	Government source	SS	d, e
China, Macao SAR					No recent, reliable estimate located		
Guam					No recent, reliable estimate located		
Indonesia	<0.1		15 - 64	2008	ARQ	HHS	
Japan					No recent, reliable estimate located		
Korea (Dem. People's Rep.)					No recent, reliable estimate located		
Korea (Republic of)	<0.1		15 - 64	2004	ARQ	HHS	e, f
Lao People's Democratic Republic					No recent, reliable estimate located		
Malaysia					No recent, reliable estimate located		
Mongolia					No recent, reliable estimate located		
Myanmar					No recent, reliable estimate located		
Philippines	<0.1		15 - 64	2005	UNODC Estimate	HHS	
Singapore					No recent, reliable estimate located		
Taiwan, Province of China	0.1		15 - 64	2005	AMCEWG		
Thailand	<0.1		15 - 64	2007	ARQ	HHS	e
Timor-Leste					No recent, reliable estimate located		
Viet Nam					No recent, reliable estimate located		
Near and Middle East /South-West Asia							
Afghanistan	<0.1		15 - 64	2009	UNODC/ Govt. Source	HHS	
Bahrain					No recent, reliable estimate located		
Iran (Islamic Republic of)					No recent, reliable estimate located		
Iraq					No recent, reliable estimate located		
Israel	0.6		18 - 40	2008	Governmetn source	HHS	
Jordan					No recent, reliable estimate located		
Kuwait	<0.1		15 - 64	2005	UNODC Estimate		g
Lebanon	0.1		15 - 64	2001	UNODC Estimate		d, e
Occupied Palestinian Territory					No recent, reliable estimate located		
Oman					No recent, reliable estimate located		
Pakistan					No recent, reliable estimate located		
Qatar					No recent, reliable estimate located		
Saudi Arabia					No recent, reliable estimate located		
Syrian Arab Republic	<0.1		15 - 64	2005	UNODC Estimate		g
United Arab Emirates					No recent, reliable estimate located		
Yemen					No recent, reliable estimate located		
South Asia							
Bangladesh					No recent, reliable estimate located		
Bhutan					No recent, reliable estimate located		
India					No recent, reliable estimate located		
Maldives					No recent, reliable estimate located		
Nepal					No recent, reliable estimate located		
Sri Lanka					No recent, reliable estimate located		
EUROPE							
East Europe							
Belarus	<0.1	<0.1 - 0.1	15 - 64	2007	ESPAD	SS	d, e
Moldova (Republic of)	<0.1	<0.1	15 - 64	2008	Government sources	HHS	e
Russian Federation*	0.2	0.2 - 0.3	15 - 64	2007	ESPAD	SS	d, e
Ukraine	0.2	0.2 - 0.3	15 - 64	2007	ESPAD	SS	d, e

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Southeast Europe							
Albania	0.8	<0.1 - 1.6	15 - 64	2006	Government source	SS	d, e
Bosnia and Herzegovina	0.6	<0.1 - 1.9	15 - 64	2008	ESPAD	SS	d, e
Bulgaria	0.6		15 - 64	2007	ARQ	HHS	
Croatia	0.9		15 - 64	2007	ESPAD	SS	d, e
Macedonia (TFYR)	<0.1		15 - 64	2007	INCSR		
Montenegro	0.8	<0.1 - 1.7	15 - 64	2008	ESPAD	SS	d, e
Romania	<0.1	<0.1	15 - 64	2007	ARQ	HHS	e
Serbia	0.5	0.1 - 1.2	15 - 64	2008	Government sources	HHS	a, d, e
Turkey	<0.1		15 - 64	2003	UNODC Estimate		
West & Central Europe							
Andorra					No recent, reliable estimate located		
Austria	0.9		15 - 64	2008	Govt.	HHS	
Belgium	1.2	1.2 - 1.3	15 - 64	2007	ESPAD	SS	c, d, e
Cyprus	0.6		15 - 65	2006	ARQ		
Czech Republic	0.7		15 - 64	2008	Government sources	HHS	
Denmark	1.4		16 - 64	2008	ARQ	HHS	
Estonia	0.6		15 - 64	2008	Government sources	HHS	
Finland	0.5		15 - 64	2006	ARQ		
France	0.6		15 - 64	2005	ARQ		
Germany	0.7		18 - 64	2006	Government source	HHS	
Greece	0.1		15 - 64	2004	ARQ		
Hungary	0.2	<0.1 - 0.4	18 - 64	2007	ARQ	HHS	
Iceland	0.9		15 - 64	2007	ESPAD	SS	d, e
Ireland	1.7		15 - 64	2007	Government source	HHS	
Italy	2.2		15 - 64	2008	Government source	HHS	
Latvia	0.5		15 - 64	2007	ARQ	HHS	
Liechtenstein	0.8		15 - 64	2005	UNODC Estimate		
Lithuania	0.2		15 - 64	2008	ARQ	HHS	
Luxembourg	0.9		15 - 64	2003	UNODC Estimate		
Malta	1.1	1.1 - 1.2	18 - 65	2007	ESPAD	SS	d, e
Monaco	1.9	1.7 - 2.0	18 - 66	2007	ESPAD	SS	d, e
Netherlands	0.6		15 - 64	2005	ARQ		
Norway	0.8		15 - 64	2004	ARQ		
Poland	0.2		16 - 64	2006	ARQ		
Portugal	0.6		15 - 64	2007	ARQ	HHS	
San Marino					No recent, reliable estimate located		
Slovakia	0.6		15 - 64	2006	ARQ	HHS	
Slovenia	0.9		15 - 64	2007	ESPAD	SS	d, e
Spain	3.0		15 - 64	2007	Government source	HHS	
Sweden	0.6	0.5 - 0.6	15 - 64	2007	ESPAD	SS	d,e
Switzerland	0.8		15 - 64	2007	ESPAD	SS	d, e
United Kingdom					No recent, reliable estimate located		
United Kingdom (England and Wales)	3.0		16 - 59	2009	Government source	HHS	
United Kingdom (Northern Ireland)	1.9		15 - 64	2007	Government source	HHS	
United Kingdom (Scotland)	3.9	3.7 - 4.0	16 - 59	2009	Government source	HHS	
OCEANIA							
Oceania							
American Samoa					No recent, reliable estimate located		
Australia	1.9		15 - 64	2007	Government Source	HHS	
Christmas Islands					No recent, reliable estimate located		
Cocos (Keeling) Islands					No recent, reliable estimate located		
Cook Islands					No recent, reliable estimate located		
Fiji					No recent, reliable estimate located		
French Polynesia					No recent, reliable estimate located		
Kiribati					No recent, reliable estimate located		
Marshall Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODCAdj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

COCAINE

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Micronesia (Federated States of)					No recent, reliable estimate located		
Nauru					No recent, reliable estimate located		
New Caledonia					No recent, reliable estimate located		
New Zealand	0.6		16 - 64	2008	Government source	HHS	
Norfolk Island					No recent, reliable estimate located		
Northern Mariana Islands					No recent, reliable estimate located		
Palau					No recent, reliable estimate located		
Papua New Guinea					No recent, reliable estimate located		
Pitcairn					No recent, reliable estimate located		
Samoa					No recent, reliable estimate located		
Solomon Islands					No recent, reliable estimate located		
Tonga					No recent, reliable estimate located		
Tuvalu					No recent, reliable estimate located		
Vanuatu					No recent, reliable estimate located		
Wallis and Futuna Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

4.2.1.3 Cannabis

CANNABIS

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
AFRICA							
East Africa							
Burundi					No recent, reliable estimate located		
Comoros	2.9		15 - 64	2002	UNODC Estimate		
Djibouti					No recent, reliable estimate located		
Eritrea					No recent, reliable estimate located		
Ethiopia	2.6		15 - 64	1999	EADIS		
Kenya	7.1	4.7 - 10.0	15 - 64	2004	ARQ, NGO, Council of Europe	SS, A	c, d, e, f
Madagascar	9.1		15 - 64	2004	ARQ	SS, A	d, e
Mauritius	3.9		15 - 54	2004	ARQ		
Rwanda					No recent, reliable estimate located		
Seychelles					No recent, reliable estimate located		
Somalia	2.5		15 - 64	2002	UNODC Estimate		
Tanzania (United Republic of)					No recent, reliable estimate located		
Uganda					No recent, reliable estimate located		
North Africa							
Algeria	5.7	5.2 - 6.4	15 - 64	2006	Council of Europe	SS, A	d
Egypt	6.2	2.9 - 9.6	15 - 64	2006	Govt; Academic Research	HHS, SS	a, d
Libyan Arab Jamahiriya					No recent, reliable estimate located		
Morocco	4.2		15 - 64	2004	ARQ	HHS	
Sudan					No recent, reliable estimate located		
Tunisia					No recent, reliable estimate located		
Southern Africa							
Angola	2.1		15 - 64	1999	ARQ		e
Botswana					No recent, reliable estimate located		
Lesotho					No recent, reliable estimate located		
Malawi					No recent, reliable estimate located		
Mozambique					No recent, reliable estimate located		
Namibia	3.9		15 - 64	2000	ARQ		
South Africa	4.3	3.5 - 6.2	15 - 64	2008	ARQ	HHS	a, e
Swaziland					No recent, reliable estimate located		
Zambia	17.7		15 - 64	2003	UNODC Estimate		
Zimbabwe	6.9		15 - 64	2000	UNODC Estimate		
West and Central Africa							
Benin					No recent, reliable estimate located		
Burkina Faso	2.9		15 - 64	2006	UNODC Estimate		d, e
Cameroon					No recent, reliable estimate located		
Cape Verde	8.1		15 - 64	2004	UNODC Estimate		d, e
Central African Republic					No recent, reliable estimate located		
Chad					No recent, reliable estimate located		
Congo					No recent, reliable estimate located		
Congo (Dem. Rep. of the)					No recent, reliable estimate located		
Côte d'Ivoire					No recent, reliable estimate located		
Equatorial Guinea					No recent, reliable estimate located		
Gabon					No recent, reliable estimate located		
Gambia					No recent, reliable estimate located		
Ghana					No recent, reliable estimate located		
Guinea					No recent, reliable estimate located		
Guinea-Bissau					No recent, reliable estimate located		
Liberia					No recent, reliable estimate located		
Mali					No recent, reliable estimate located		
Mauritania					No recent, reliable estimate located		
Niger					No recent, reliable estimate located		
Nigeria	13.8		15 - 64	2000	ARQ	R	h
Saint Helena					No recent, reliable estimate located		
Sao Tome and Principe					No recent, reliable estimate located		
Senegal					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

CANNABIS Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)							
Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Sierra Leone					No recent, reliable estimate located		
Togo	2.7		15 - 64	2006	ARQ	SS	d, e
AMERICAS							
Caribbean							
Anguilla					No recent, reliable estimate located		
Antigua and Barbuda	10.6	7.8 - 13.4	15 - 64	2005	Government source	SS	d, e
Bahamas	5.5	3.2 - 7.9	15 - 64	2008	ARQ	SS	d, e
Barbados	8.3		15 - 64	2006	CICAD	HHS	
Bermuda					No recent, reliable estimate located		
British Virgin Islands					No recent, reliable estimate located		
Cayman Islands					No recent, reliable estimate located		
Cuba					No recent, reliable estimate located		
Dominica	10.8	6.1 - 15.5	15 - 64	2006	Government source	SS	d, e
Dominican Republic	0.3	0.3 - 1.4	15 - 64	2008	ARQ	SS	d, e
Grenada	10.8	7.3 - 14.4	15 - 64	2005	Government source	SS	d, e
Haiti	1.4	0.4 - 2.2	15 - 64	2005	CICAD	SS	d, e
Jamaica	9.9	7.5 - 12.2	15 - 64	2006	Government source	SS	d, e
Montserrat					No recent, reliable estimate located		
Netherlands Antilles					No recent, reliable estimate located		
Puerto Rico	4.9	3.1 - 6.7	15 - 64	2005	Government source	SS	d, e
Saint Kitts and Nevis	11.7	8.3 - 15.1	15 - 64	2006	Government source	SS	d, e
Saint Lucia	9.0		15 - 64	2006	UNODC Estimate	SS	d, e
Saint Vincent and the Grenadines	7.1	5.1 - 9.1	15 - 64	2006	Government source	SS	d, e
Trinidad and Tobago	4.7	2.9 - 6.4	15 - 64	2006	Government source	SS	d, e
Turks and Caicos Islands	5.4		15 - 64	2002	UNODC Estimate		
United States Virgin Islands					No recent, reliable estimate located		
Central America							
Belize	8.5		12 - 65	2005	CICAD	HHS	
Costa Rica	1.0		12 - 70	2006	ARQ	HHS	
El Salvador	0.4		12 - 65	2005	CICAD	HHS	
Guatemala	4.8		15 - 64	2005	UNODC Estimate	HHS, SS	c, d
Honduras	0.8	0.4 - 1.6	12 - 35	2005	CICAD	SS	d, e
Nicaragua	1.1		12 - 65	2006	CICAD	HHS, c	
Panama	3.6	3.4 - 3.7	12 - 65	2003	CICAD	HHS	d, e
North America							
Canada	13.6		15 - 64	2008	ARQ	HHS	
Mexico	1.0		12 - 65	2008	Govt. source (ENA)	HHS	
Saint Pierre and Miquelon					No recent, reliable estimate located		
United States of America	12.5		15 - 64	2008	Govt. source (SAMSHA)	HHS	
South America							
Argentina	7.2		15 - 64	2006	UNODC/ CICAD	HHS, a, c	
Bolivia (Plurinational State of)	4.3		15 - 64	2007	UNODC/ CICAD	HHS, a, c	
Brazil	2.6		12 - 65	2005	Government source	HHS, c	
Chile	6.7		15 - 64	2008	ARQ	HHS	
Colombia	2.3		12 - 65	2008	Government source	HHS	
Ecuador	0.7		15 - 64	2007	UNODC/ CICAD	HHS, a, c	
Falkland Islands (Malvinas)					No recent, reliable estimate located		
Guyana	2.6		15 - 64	2002	UNODC Estimate		
Paraguay	1.6		15 - 64	2005	UNODC Estimate		
Peru	0.7		12 - 64	2006	ARQ	HHS, c	
Suriname	4.3	3.8 - 4.7	12 - 65	2007	Government source	HHS	
Uruguay	6.0		12 - 65	2006	UNODC/ CICAD	HHS, a, c	
Venezuela (Bolivarian Republic of)	0.9	0.2 - 1.4	15 - 64	2005	Government source	HHS	a, e
ASIA							
Central Asia and Transcaucasian countries							
Armenia	3.5		15 - 64	2003	UNODC Estimate		
Azerbaijan	3.5		15 - 64	2004	UNODC Estimate		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

CANNABIS

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Georgia	1.1	0.5 - 1.7	15 - 64	2005	ARQ	SS	a, d, e
Kazakhstan	4.2		15 - 64	2003	INCSR		
Kyrgyzstan	6.4		15 - 64	2001	ARQ		
Tajikistan					No recent, reliable estimate located		
Turkmenistan					No recent, reliable estimate located		
Uzbekistan	4.2		15 - 64	2003	UNODC Estimate		e
East and South-East Asia							
Brunei Darussalam					No recent, reliable estimate located		
Cambodia	3.5		15 - 64	2003	UNODC Estimate		
China					No recent, reliable estimate located		
China, Hong Kong SAR	0.4	0.2 - 2.0	15 - 64	2008	Government source	SS	d, e
China, Macao SAR	0.7		15 - 64	2003	UNODC Estimate	R	d, e
Guam	18.4	14.7 - 22.0	15 - 64	2007	Government source	SS	d, e
Indonesia	0.4		15 - 64	2008	ARQ	HHS	
Japan					No recent, reliable estimate located		
Korea (Dem. People's Rep.)					No recent, reliable estimate located		
Korea (Republic of)	0.3	<0.1 - 0.6	15 - 64	2004	ARQ	HHS	c, e
Lao People's Democratic Republic	0.9	0.7 - 1.1	15 - 64	2008	UNODC report	SS	c, d
Malaysia	1.6		15 - 64	2003	UNODC Estimate		
Mongolia					No recent, reliable estimate located		
Myanmar	0.9		15 - 64	2005	UNODC Estimate		d, e
Philippines	0.8	0.7 - 0.9	15 - 64	2008	Government source	HHS	c, e
Singapore					No recent, reliable estimate located		
Taiwan, Province of China	0.3		15 - 64	2005	AMCEWG		
Thailand	1.2		15 - 64	2007	ARQ	HHS	
Timor-Leste					No recent, reliable estimate located		
Viet Nam	0.3		15 - 64	2002	UNODC Estimate		
Near and Middle East /South-West Asia							
Afghanistan	4.3	3.4 - 5.2	15 - 64	2009	UNODC/ Govt. Source	HHS	
Bahrain					No recent, reliable estimate located		
Iran (Islamic Republic of)	4.2		15 - 64	1999	ARQ		
Iraq					No recent, reliable estimate located		
Israel	8.9		18 - 40	2008	Government source	HHS	
Jordan	2.1		15 - 64	2001	ARQ		a
Kuwait	3.1		15 - 64	2005	UNODC Estimate		
Lebanon	6.4		15 - 64	2001	ARQ		d
Occupied Palestinian Territory					No recent, reliable estimate located		
Oman	0.1		15 - 64	1999			
Pakistan	3.9		15 - 64	2000	INCSR		
Qatar					No recent, reliable estimate located		
Saudi Arabia	0.3		15 - 64	2006	Government source/ NGO/Academic	R	
Syrian Arab Republic					No recent, reliable estimate located		
United Arab Emirates	5.4		15 - 64	2006	UNODC Estimate		
Yemen					No recent, reliable estimate located		
South Asia							
Bangladesh	3.3		15 - 54	2004	Academic research	HHS	a, e,f
Bhutan					No recent, reliable estimate located		
India					No recent, reliable estimate located		
Maldives					No recent, reliable estimate located		
Nepal					No recent, reliable estimate located		
Sri Lanka	1.5		15 - 64	2000	UNODC Estimate		
EUROPE							
East Europe							
Belarus	1.1	0.9 - 1.3	15 - 64	2007	ESPAD	SS	c, d, e
Moldova (Republic of)	0.9		15 - 64	2008	Government source	HHS	
Russian Federation*	3.5		15 - 64	2007	ESPAD	SS	d, e
Ukraine	2.5	2.4 - 2.6	15 - 64	2007	ESPAD	SS	d, e

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

CANNABIS

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Southeast Europe							
Albania	1.8		15 - 64	2006	Government source	SS	d, e
Bosnia and Herzegovina	2.8	2.8 - 4.6	15 - 64	2008	ESPAD	SS	c, d, e
Bulgaria	2.5		15 - 64	2008	ARQ	HHS	
Croatia	5.2	5.1 - 5.3	15 - 64	2007	ESPAD	SS	d, e
Macedonia (TFYR)	0.6	0.5 - 2.4	15 - 64	2008	ESPAD	SS	d, e
Montenegro	0.2	0.2 - 2.0	15 - 64	2008	ESPAD	SS	d, e
Romania	0.4		15 - 64	2007	ARQ	HHS	
Serbia	4.1	2.8 - 5.4	15 - 64	2006	Government source	HHS	a, d, e
Turkey	1.9		15 - 64	2003	UNODC Estimate		
West & Central Europe							
Andorra					No recent, reliable estimate located		
Austria	3.5		15 - 64	2008	Government source	HHS	a
Belgium	5.0		15 - 64	2004	EMCDDA	HHS	
Cyprus	2.1		15 - 65	2006	ARQ		
Czech Republic	15.2		15 - 64	2008	Government source	HHS	
Denmark	5.5		16 - 64	2008	ARQ	HHS	
Estonia	6.0		15 - 64	2008	Government source	HHS	
Finland	3.1	3.0 - 3.2	15 - 64	2008	Government source	HHS	a
France	8.6		15 - 64	2005	ARQ		
Germany	4.7		15 - 64	2007	Government source	HHS	
Greece	1.7		15 - 64	2004	ARQ		
Hungary	2.3	1.7 - 2.9	18 - 64	2007	ARQ	HHS	
Iceland	3.4	3.2 - 3.5	15 - 64	2007	ESPAD	SS	d, e
Ireland	6.3		15 - 64	2007	Government source	HHS	
Italy	14.6		15 - 64	2008	Government source	HHS	
Latvia	4.9		15 - 64	2007	ARQ		
Liechtenstein	8.6		15 - 64	2005	UNODC Estimate		
Lithuania	5.6		15 - 64	2008	ARQ	HHS	
Luxembourg	7.6		15 - 64	2003	UNODC Estimate		
Malta	4.5	4.4 - 4.6	18 - 65	2007	ESPAD	SS	d, e
Monaco	8.9	7.9 - 10.0	18 - 66	2007	ESPAD	SS	d, e
Netherlands	5.4		15 - 64	2005	ARQ		
Norway	4.6		15 - 64	2004	ARQ		
Poland	2.7		16 - 64	2006	ARQ		
Portugal	3.6		15 - 64	2007	ARQ	HHS	
San Marino					No recent, reliable estimate located		
Slovakia	6.9		15 - 64	2006	ARQ	HHS	
Slovenia	4.1		15 - 64	2007	ESPAD	SS	d, e
Spain	10.1		15 - 64	2007	Government source	HHS	
Sweden	2.1		15 - 64	2007	ARQ	HHS	
Switzerland	9.7	8.5 - 10.9	15 - 64	2007	ESPAD	SS	d, e
United Kingdom					No recent, reliable estimate located		
United Kingdom (England and Wales)	7.9		16 - 59	2009	Government source	HHS	
United Kingdom (Northern Ireland)	7.2		15 - 64	2007	Government source	HHS	
United Kingdom (Scotland)	8.4		16 - 59	2009	Government source	HHS	
OCEANIA							
Oceania							
American Samoa	7.0	4.7 - 9.2	15 - 64	2007	Government source	SS	d, e
Australia	10.6		15 - 64	2007	Government source	HHS	
Christmas Islands					No recent, reliable estimate located		
Cocos (Keeling) Islands					No recent, reliable estimate located		
Cook Islands					No recent, reliable estimate located		
Fiji	5.1	3.0 - 7.1	15 - 64	2004	Government source	SS	d, e
French Polynesia					No recent, reliable estimate located		
Kiribati					No recent, reliable estimate located		
Marshall Islands	5.5	3.4 - 7.5	15 - 64	2007	Government source	SS	d, e

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODCAdj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

CANNABIS

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Micronesia (Federated States of)					No recent, reliable estimate located		
Nauru					No recent, reliable estimate located		
New Caledonia					No recent, reliable estimate located		
New Zealand	14.6		16 - 64	2008	Government source	HHS	
Norfolk Island					No recent, reliable estimate located		
Northern Mariana Islands	22.2	18.1 - 26.4	15 - 64	2007	Government source	SS	d, e
Palau	24.2	19.8 - 28.6	15 - 64	2007	Government source	SS	d, e
Papua New Guinea					No recent, reliable estimate located		
Pitcairn					No recent, reliable estimate located		
Samoa					No recent, reliable estimate located		
Solomon Islands					No recent, reliable estimate located		
Tonga					No recent, reliable estimate located		
Tuvalu					No recent, reliable estimate located		
Vanuatu					No recent, reliable estimate located		
Wallis and Futuna Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

4.2.1.4 Amphetamine-type stimulants

AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
AFRICA							
East Africa							
Burundi					No recent, reliable estimate located		
Comoros					No recent, reliable estimate located		
Djibouti					No recent, reliable estimate located		
Eritrea					No recent, reliable estimate located		
Ethiopia					No recent, reliable estimate located		
Kenya					No recent, reliable estimate located		
Madagascar					No recent, reliable estimate located		
Mauritius					No recent, reliable estimate located		
Rwanda					No recent, reliable estimate located		
Seychelles					No recent, reliable estimate located		
Somalia					No recent, reliable estimate located		
Tanzania (United Republic of)					No recent, reliable estimate located		
Uganda					No recent, reliable estimate located		
North Africa							
Algeria					No recent, reliable estimate located		
Egypt	0.5	0.4 - 0.5	15 - 64	2006	Govt; Academic Research	HHS, SS	a, b, d
Libyan Arab Jamahiriya					No recent, reliable estimate located		
Morocco	<0.1		15 - 64	1999	ARQ		
Sudan					No recent, reliable estimate located		
Tunisia					No recent, reliable estimate located		
Southern Africa							
Angola					No recent, reliable estimate located		
Botswana					No recent, reliable estimate located		
Lesotho					No recent, reliable estimate located		
Malawi					No recent, reliable estimate located		
Mozambique					No recent, reliable estimate located		
Namibia	<0.1		15 - 64	2000	ARQ		
South Africa	1.0	0.8 - 1.4	15 - 64	2008	ARQ	HHS	a, e
Swaziland					No recent, reliable estimate located		
Zambia	0.1		15 - 64	2003	UNODC Estimate		
Zimbabwe	0.1		15 - 64	2000	ARQ		
West and Central Africa							
Benin					No recent, reliable estimate located		
Burkina Faso					No recent, reliable estimate located		
Cameroon					No recent, reliable estimate located		
Cape Verde					No recent, reliable estimate located		
Central African Republic					No recent, reliable estimate located		
Chad					No recent, reliable estimate located		
Congo					No recent, reliable estimate located		
Congo (Dem. Rep. of the)					No recent, reliable estimate located		
Côte d'Ivoire					No recent, reliable estimate located		
Equatorial Guinea					No recent, reliable estimate located		
Gabon					No recent, reliable estimate located		
Gambia					No recent, reliable estimate located		
Ghana					No recent, reliable estimate located		
Guinea					No recent, reliable estimate located		
Guinea-Bissau					No recent, reliable estimate located		
Liberia					No recent, reliable estimate located		
Mali					No recent, reliable estimate located		
Mauritania					No recent, reliable estimate located		
Niger					No recent, reliable estimate located		
Nigeria	1.1		15 - 64	1999	UNODC Estimate		
Saint Helena					No recent, reliable estimate located		
Sao Tome and Principe					No recent, reliable estimate located		
Senegal					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Sierra Leone					No recent, reliable estimate located		
Togo					No recent, reliable estimate located		
AMERICAS							
Caribbean							
Anguilla					No recent, reliable estimate located		
Antigua and Barbuda	0.6	0.2 - 1.2	15 - 64	2005	Government source	SS	d, e
Bahamas	0.4	0.1 - 1.1	15 - 64	2008	ARQ	SS	d, e
Barbados	0.2		12 - 65	2006	CICAD	HHS, z	
Bermuda					No recent, reliable estimate located		
British Virgin Islands					No recent, reliable estimate located		
Cayman Islands					No recent, reliable estimate located		
Cuba					No recent, reliable estimate located		
Dominica	0.9	0.3 - 1.6	15 - 64	2006	Government source	SS	d, e
Dominican Republic	1.0	<0.1 - 2.6	15 - 64	2008	ARQ	SS, z	d, e
Grenada	0.7		15 - 64	2005	ARQ		
Haiti					No recent, reliable estimate located		
Jamaica	1.1	0.4 - 1.9	15 - 64	2006	Government source	SS	d, e
Montserrat					No recent, reliable estimate located		
Netherlands Antilles					No recent, reliable estimate located		
Puerto Rico	0.4	0.1 - 1.1	15 - 64	2005	Government source	SS	d, e
Saint Kitts and Nevis	0.2	0.1 - 0.6	15 - 64	2006	Government source	SS, z	d, e
Saint Lucia	1.2	0.4 - 1.9	15 - 64	2005	CICAD	SS, z	d, e
Saint Vincent and the Grenadines	0.6	0.2 - 1.3	15 - 64	2006	CICAD	SS, z	d, e
Trinidad and Tobago	0.7	0.2 - 1.4	15 - 64	2006	CICAD	SS, z	d, e
Turks and Caicos Islands	0.3		15 - 64	2003	UNODC Estimate		d, e
United States Virgin Islands					No recent, reliable estimate located		
Central America							
Belize	1.4		12 - 65	2005	CICAD	HHS, z	
Costa Rica	1.3		12 - 70	2006	ARQ		
El Salvador	3.3		12 - 65	2005	CICAD	HHS, z	
Guatemala	0.9		15 - 64	2005	UNODC Estimate		d, e
Honduras	0.8		15 - 64	2005	UNODC Estimate		d,e
Nicaragua	0.8		15 - 64	2003	UNODC Estimate		d
Panama	1.2		12 - 65	2003	CICAD	HHS, z	
North America							
Canada	1.5		15 - 64	2008	CADUMS	HHS	
Mexico	0.2	0.1 - 0.2	12 - 65	2008	Govt. source (ENA)	HHS	
Saint Pierre and Miquelon					No recent, reliable estimate located		
United States of America	1.3		15 - 64	2008	Govt. source (SAMHSA)	HHS	
South America							
Argentina	0.6		15 - 64	2005	UNODC Estimate	SS, z	d, e
Bolivia (Plurinational State of)	0.5		12 - 65	2007	ARQ	HHS	
Brazil	0.7		12 - 65	2005	Government source	HHS, c	
Chile	0.4		15 - 64	2008	ARQ	HHS	
Colombia	0.5	<0.1 - 1.9	12 - 65	2008	Government source	HHS, SS	a, c, d, e
Ecuador	0.2		15 - 64	2005	UNODC Estimate	SS, z	d, e
Falkland Islands (Malvinas)					No recent, reliable estimate located		
Guyana	0.5	0.1 - 1.1	15 - 64	2002	CICAD	SS, z	d, e
Paraguay	0.5		15 - 64	2005	UNODC Estimate	SS, z	d, e
Peru	0.2		12 - 64	2006	Govt.	HHS	
Suriname	0.7		12 - 65	2007	Government source	HHS, z	
Uruguay	0.1		12 - 65	2006	ARQ		
Venezuela (Bolivarian Republic of)	0.6		15 - 64	2002	UNODC Estimate		d, e
ASIA							
Central Asia and Transcaucasian countries							
Armenia	<0.1		15 - 64	2005	UNODC Estimate	HHS	
Azerbaijan					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Georgia					No recent, reliable estimate located		
Kazakhstan					No recent, reliable estimate located		
Kyrgyzstan					No recent, reliable estimate located		
Tajikistan					No recent, reliable estimate located		
Turkmenistan					No recent, reliable estimate located		
Uzbekistan					No recent, reliable estimate located		
East and South-East Asia							
Brunei Darussalam	0.3		15 - 64	2006	UNODC Estimate		g
Cambodia	0.6		15 - 64	2004	UNODC Estimate		d, e
China					No recent, reliable estimate located		
China, Hong Kong SAR	0.4	<0.1 - 1.1	15 - 64	2008	Government source	SS	d, e
China, Macao SAR					No recent, reliable estimate located		
Guam	1.4	0.5 - 2.3	15 - 64	2007	Government source	SS	d, e
Indonesia	0.2		15 - 64	2008	ARQ	HHS	
Japan					No recent, reliable estimate located		
Korea (Dem. People's Rep.)					No recent, reliable estimate located		
Korea (Republic of)	0.1	<0.1 - 0.2	15 - 64	2004	ARQ	HHS	b, c, e
Lao People's Democratic Republic	1.4	1.1 - 1.7	15 - 64	2008	Academic research	SS	a, c, d, e
Malaysia	0.6		15 - 64	2005	UNODC Estimate		d, g, h
Mongolia					No recent, reliable estimate located		
Myanmar	0.2		15 - 64	2005	UNODC Estimate		d, f
Philippines	2.1	1.9 - 2.4	15 - 64	2008	Government source	HHS	c, e
Singapore					No recent, reliable estimate located		
Taiwan, Province of China	0.6		12 - 64	2005	AMCEWG		
Thailand	1.4		12 - 65	2007	ARQ	HHS	
Timor-Leste					No recent, reliable estimate located		
Viet Nam	0.2		15 - 64	2003	UNODC Estimate		h
Near and Middle East /South-West Asia							
Afghanistan	<0.1		15 - 64	2009	UNODC/ Govt. Source	HHS	
Bahrain					No recent, reliable estimate located		
Iran (Islamic Republic of)					No recent, reliable estimate located		
Iraq					No recent, reliable estimate located		
Israel	4.5		18 - 40	2008	Government source	HHS	
Jordan	0.4		15 - 64	2001	UNODC Estimate		
Kuwait	0.3		15 - 64	2005	UNODC Estimate		g
Lebanon	0.4		15 - 64	2001	UNODC Estimate		d, e
Occupied Palestinian Territory					No recent, reliable estimate located		
Oman					No recent, reliable estimate located		
Pakistan					No recent, reliable estimate located		
Qatar					No recent, reliable estimate located		
Saudi Arabia	0.4		15 - 64	2006	UNODC Estimate		g
Syrian Arab Republic					No recent, reliable estimate located		
United Arab Emirates					No recent, reliable estimate located		
Yemen					No recent, reliable estimate located		
South Asia							
Bangladesh					No recent, reliable estimate located		
Bhutan					No recent, reliable estimate located		
India					No recent, reliable estimate located		
Maldives					No recent, reliable estimate located		
Nepal					No recent, reliable estimate located		
Sri Lanka					No recent, reliable estimate located		
EUROPE							
East Europe							
Belarus	0.4		15 - 64	2006	UNODC Estimate		g
Moldova (Republic of)	<0.1		15 - 64	2008	Government source	HHS	e
Russian Federation*	0.4	0.2 - 0.6	15 - 64	2007	ESPAD	SS	d, e
Ukraine	0.4	0.2 - 0.6	15 - 64	2007	ESPAD	SS	d, e

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,

x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Southeast Europe							
Albania	<0.1		15 - 64	2004	ARQ		
Bosnia and Herzegovina	1.0	0.4 - 1.7	15 - 64	2008	ESPAD	SS	c, d, e
Bulgaria	1.0		15 - 64	2008	ARQ	HHS	
Croatia	0.7	0.6 - 0.8	15 - 64	2007	ESPAD	SS	d, e
Macedonia (TFYR)					No recent, reliable estimate located		
Montenegro	0.5	<0.1 - 0.9	15 - 64	2008	ESPAD	SS	d, e
Romania	<0.1		15 - 64	2007	Government source	HHS	e
Serbia	0.2	0.1 - 0.5	15 - 64	2006	Government sources	HHS	a, e
Turkey	0.2		15 - 64	2003	UNODC Estimate		
West & Central Europe							
Andorra					No recent, reliable estimate located		
Austria	0.5		15 - 64	2008	Government source	HHS	a
Belgium	0.9	0.6 - 1.1	15 - 64	2007	ESPAD	SS	c, d, e
Cyprus	0.4		15 - 64	2006	ARQ		
Czech Republic	1.7		15 - 64	2008	Government source	HHS	
Denmark	1.2		16 - 64	2008	ARQ	HHS	
Estonia	1.0		15 - 64	2008	Government source	HHS	
Finland	0.6		15 - 64	2006	ARQ		
France	0.2		15 - 64	2005	ARQ		
Germany	0.5		18 - 64	2006	Government source	HHS	
Greece	0.2		15 - 64	2004	ARQ		
Hungary	0.5	0.2 - 0.8	18 - 64	2007	ARQ	HHS	
Iceland	0.7	0.6 - 0.9	15 - 64	2003	ESPAD	SS	
Ireland	0.4		15 - 64	2007	Government source	HHS	
Italy	0.6	0.6 - 0.7	15 - 64	2007	Government source/ ESPAD	HHS, SS	d, e
Latvia	0.9		15 - 64	2007	ARQ		
Liechtenstein	0.2		15 - 64	2005	UNODC Estimate		d
Lithuania	0.7		15 - 64	2008	ARQ	HHS	
Luxembourg	0.4		15 - 64	1999	UNODC Estimate		
Malta	0.9	0.6 - 1.2	15 - 64	2007	ESPAD	SS	d, e
Monaco	0.5	0.5 - 0.6	15 - 64	2007	ESPAD	SS	d, e
Netherlands	0.3		15 - 64	2005	ARQ	HHS	
Norway	1.1		15 - 64	2004	ARQ	HHS	
Poland	0.7		15 - 64	2006	ARQ		
Portugal	0.2		15 - 64	2007	ARQ	HHS	
San Marino					No recent, reliable estimate located		
Slovakia	0.3		15 - 64	2006	EMCDDA	HHS	
Slovenia	0.5	0.5 - 0.6	15 - 64	2007	ESPAD	SS	d, e
Spain	0.9		15 - 64	2007	Government source	HHS	
Sweden	0.4	0.2 - 0.6	15 - 64	2007	ESPAD	SS	d, e
Switzerland	0.6	0.6 - 0.7	15 - 64	2007	ESPAD	SS	d, e
United Kingdom					No recent, reliable estimate located		
United Kingdom (England and Wales)	1.1		16 - 64	2009	Government source	HHS	a
United Kingdom (Northern Ireland)	1.0		16 - 59	2007	Government source	HHS	
United Kingdom (Scotland)	1.4		16 - 64	2009	Government source	HHS	a
OCEANIA							
Oceania							
American Samoa	1.3	0.5 - 2.3	15 - 64	2007	Government source	SS	d, e
Australia	2.7		15 - 64	2007	Government source	HHS	
Christmas Islands					No recent, reliable estimate located		
Cocos (Keeling) Islands					No recent, reliable estimate located		
Cook Islands					No recent, reliable estimate located		
Fiji					No recent, reliable estimate located		
French Polynesia					No recent, reliable estimate located		
Kiribati					No recent, reliable estimate located		
Marshall Islands	2.7	1.4 - 4.0	15 - 64	2007	Government source	SS	d, e

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

AMPHETAMINES

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Micronesia (Federated States of)					No recent, reliable estimate located		
Nauru					No recent, reliable estimate located		
New Caledonia					No recent, reliable estimate located		
New Zealand	2.1		16 - 64	2008	Government source	HHS	
Norfolk Island					No recent, reliable estimate located		
Northern Mariana Islands	1.2	0.4 - 2.1	15 - 64	2007	Government source	SS	d, e
Palau	1.6	0.6 - 2.6	15 - 64	2007	Government source	SS	d, e
Papua New Guinea					No recent, reliable estimate located		
Pitcairn					No recent, reliable estimate located		
Samoa					No recent, reliable estimate located		
Solomon Islands					No recent, reliable estimate located		
Tonga					No recent, reliable estimate located		
Tuvalu					No recent, reliable estimate located		
Vanuatu					No recent, reliable estimate located		
Wallis and Futuna Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

4.2.1.5 Ecstasy

ECSTASY

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
AFRICA							
East Africa							
Burundi					No recent, reliable estimate located		
Comoros					No recent, reliable estimate located		
Djibouti					No recent, reliable estimate located		
Eritrea					No recent, reliable estimate located		
Ethiopia					No recent, reliable estimate located		
Kenya					No recent, reliable estimate located		
Madagascar					No recent, reliable estimate located		
Mauritius					No recent, reliable estimate located		
Rwanda					No recent, reliable estimate located		
Seychelles					No recent, reliable estimate located		
Somalia					No recent, reliable estimate located		
Tanzania (United Republic of)					No recent, reliable estimate located		
Uganda					No recent, reliable estimate located		
North Africa							
Algeria					No recent, reliable estimate located		
Egypt					No recent, reliable estimate located		
Libyan Arab Jamahiriya					No recent, reliable estimate located		
Morocco	<0.1		15 - 64	2003	ARQ		
Sudan					No recent, reliable estimate located		
Tunisia					No recent, reliable estimate located		
Southern Africa							
Angola					No recent, reliable estimate located		
Botswana					No recent, reliable estimate located		
Lesotho					No recent, reliable estimate located		
Malawi					No recent, reliable estimate located		
Mozambique					No recent, reliable estimate located		
Namibia	<0.1		15 - 64	2000	ARQ		
South Africa	0.4		15 - 64	2004	UNODC Estimate		d, e
Swaziland					No recent, reliable estimate located		
Zambia	0.3		15 - 64	2003	UNODC Estimate		e, f
Zimbabwe					No recent, reliable estimate located		
West and Central Africa							
Benin					No recent, reliable estimate located		
Burkina Faso					No recent, reliable estimate located		
Cameroon					No recent, reliable estimate located		
Cape Verde	<0.1		15 - 64	2004	UNODC Estimate		d
Central African Republic					No recent, reliable estimate located		
Chad					No recent, reliable estimate located		
Congo					No recent, reliable estimate located		
Congo (Dem. Rep. of the)					No recent, reliable estimate located		
Côte d'Ivoire					No recent, reliable estimate located		
Equatorial Guinea					No recent, reliable estimate located		
Gabon					No recent, reliable estimate located		
Gambia					No recent, reliable estimate located		
Ghana					No recent, reliable estimate located		
Guinea					No recent, reliable estimate located		
Guinea-Bissau					No recent, reliable estimate located		
Liberia					No recent, reliable estimate located		
Mali					No recent, reliable estimate located		
Mauritania					No recent, reliable estimate located		
Niger					No recent, reliable estimate located		
Nigeria					No recent, reliable estimate located		
Saint Helena					No recent, reliable estimate located		
Sao Tome and Principe					No recent, reliable estimate located		
Senegal					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

ECSTASY

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Sierra Leone					No recent, reliable estimate located		
Togo					No recent, reliable estimate located		
AMERICAS							
Caribbean							
Anguilla					No recent, reliable estimate located		
Antigua and Barbuda	0.2	<0.1 - 0.7	15 - 64	2005	Government source	SS	d, e
Bahamas	0.1	<0.1 - 0.6	15 - 64	2008	Government source	SS	d, e
Barbados	0.5		15 - 64	2006	CICAD	HHS	
Bermuda					No recent, reliable estimate located		
British Virgin Islands					No recent, reliable estimate located		
Cayman Islands					No recent, reliable estimate located		
Cuba					No recent, reliable estimate located		
Dominica	<0.1	<0.1 - 0.5	15 - 64	2006	Government source	SS	d, e
Dominican Republic	<0.1	<0.1 - 0.5	15 - 64	2008	Government source	SS	d, e
Grenada	0.2	<0.1 - 0.7	15 - 64	2005	Government source	SS	d, e
Haiti	0.6	0.1 - 1.2	15 - 64	2005	CICAD	SS	d, e
Jamaica					No recent, reliable estimate located		
Montserrat					No recent, reliable estimate located		
Netherlands Antilles					No recent, reliable estimate located		
Puerto Rico	0.4	<0.1 - 1.0	15 - 64	2005	Government source	SS	
Saint Kitts and Nevis	0.4	<0.1 - 1.0	15 - 64	2006	Government source	SS	d, e
Saint Lucia					No recent, reliable estimate located		
Saint Vincent and the Grenadines	<0.1	<0.1 - 0.5	15 - 64	2006	CICAD	SS	d, e
Trinidad and Tobago	0.1	<0.1 - 0.6	15 - 64	2006	CICAD	SS	d, e
Turks and Caicos Islands	0.7		15 - 64	2003	UNODC Estimate		d, e
United States Virgin Islands					No recent, reliable estimate located		
Central America							
Belize	0.3		12 - 65	2005	Government source	HHS	
Costa Rica	0.2	0.1 - 0.4	12 - 70	2006	ARQ	SS	d, e
El Salvador	<0.1		15 - 64	2005	CICAD	HHS	a, e
Guatemala	<0.1		15 - 64	2005	UNODC Estimate		
Honduras	<0.1		15 - 64	2005	UNODC Estimate		d
Nicaragua	<0.1		12 - 65	2006	CICAD	HHS, c	e
Panama	0.4		15 - 64	2003	UNODC Estimate		d
North America							
Canada	1.7		15 - 64	2008	ARQ	HHS	
Mexico	<0.1		15 - 64	2002	Govt. source (CONADIC)		
Saint Pierre and Miquelon					No recent, reliable estimate located		
United States of America	1.0		15 - 64	2008	Govt. source (SAMHSA)	HHS	
South America							
Argentina	0.5		12 - 65	2006	Government source		
Bolivia (Plurinational State of)	0.1		12 - 65	2007	ARQ	HHS, c	
Brazil	0.2		15 - 64	2005	UNODC Estimate		
Chile	0.1		15 - 64	2008	ARQ	HHS	
Colombia	0.3		12 - 65	2008	Government source	HHS, c	
Ecuador	0.2		15 - 64	2005	UNODC Estimate		
Falkland Islands (Malvinas)					No recent, reliable estimate located		
Guyana	0.1		15 - 64	2002	UNODC Estimate		
Paraguay	<0.1		15 - 64	2005	UNODC Estimate		
Peru	<0.1		12 - 64	2006	ARQ	HHS, c	
Suriname	0.1	<0.1 - 0.2	12 - 65	2007	Government source	HHS, c	e
Uruguay	0.2		15 - 64	2006	Government source	HHS, a, c	c, e
Venezuela (Bolivarian Republic of)	<0.1	<0.1	15 - 64	2005	Government source	HHS	a, e
ASIA							
Central Asia and Transcaucasian countries							
Armenia	0.1		15 - 64	2005	UNODC Estimate	HHS	
Azerbaijan					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

ECSTASY

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Georgia	1.7	0.7 - 2.4	15 - 64	2005	ARQ	SS	d, e
Kazakhstan					No recent, reliable estimate located		
Kyrgyzstan					No recent, reliable estimate located		
Tajikistan					No recent, reliable estimate located		
Turkmenistan					No recent, reliable estimate located		
Uzbekistan					No recent, reliable estimate located		
East and South-East Asia							
Brunei Darussalam					No recent, reliable estimate located		
Cambodia	0.1		15 - 64	2003	UNODC Estimate		
China					No recent, reliable estimate located		
China, Hong Kong SAR	0.2	<0.1 - 0.8	15 - 64	2008	Government source	SS	d, e
China, Macao SAR	0.3		15 - 64	2002	UNODC Estimate		c, e
Guam					No recent, reliable estimate located		
Indonesia	0.2		15 - 64	2008	ARQ	HHS	
Japan					No recent, reliable estimate located		
Korea (Dem. People's Rep.)					No recent, reliable estimate located		
Korea (Republic of)	<0.1	<0.1	15 - 64	2004	ARQ	HHS	c, e
Lao People's Democratic Republic					No recent, reliable estimate located		
Malaysia	0.4		15 - 64	2003	UNODC Estimate		e, g
Mongolia					No recent, reliable estimate located		
Myanmar					No recent, reliable estimate located		
Philippines	0.2		15 - 64	2004	Government source	HHS	
Singapore					No recent, reliable estimate located		
Taiwan, Province of China	0.5		15 - 64	2005	AMCEWG		a
Thailand	0.3		15 - 64	2007	ARQ	HHS	
Timor-Leste					No recent, reliable estimate located		
Viet Nam	0.2		15 - 64	2003	UNODC Estimate		
Near and Middle East /South-West Asia							
Afghanistan					No recent, reliable estimate located		
Bahrain					No recent, reliable estimate located		
Iran (Islamic Republic of)					No recent, reliable estimate located		
Iraq					No recent, reliable estimate located		
Israel	0.7		18 - 40	2008	Government source	HHS	
Jordan					No recent, reliable estimate located		
Kuwait					No recent, reliable estimate located		
Lebanon	0.5		15 - 64	2001	UNODC Estimate		d, e
Occupied Palestinian Territory					No recent, reliable estimate located		
Oman					No recent, reliable estimate located		
Pakistan					No recent, reliable estimate located		
Qatar					No recent, reliable estimate located		
Saudi Arabia					No recent, reliable estimate located		
Syrian Arab Republic					No recent, reliable estimate located		
United Arab Emirates					No recent, reliable estimate located		
Yemen					No recent, reliable estimate located		
South Asia							
Bangladesh					No recent, reliable estimate located		
Bhutan					No recent, reliable estimate located		
India					No recent, reliable estimate located		
Maldives					No recent, reliable estimate located		
Nepal					No recent, reliable estimate located		
Sri Lanka					No recent, reliable estimate located		
EUROPE							
East Europe							
Belarus	0.3		15 - 64	2007	ESPAD	SS	c, d, e
Moldova (Republic of)	0.3		15 - 64	2008	Government sources	HHS	
Russian Federation*	0.7		15 - 64	2007	ESPAD	SS	d, e
Ukraine	0.7		15 - 64	2007	ESPAD	SS	d, e

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

ECSTASY Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)							
Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Southeast Europe							
Albania	1.0	0.3 - 2.1	15 - 64	2006	Government	SS	d, e
Bosnia and Herzegovina	1.4	0.4 - 2.7	15 - 64	2008	ESPAD	SS	c, d, e
Bulgaria	0.7		15 - 64	2008	ARQ	HHS	
Croatia	0.8		15 - 64	2007	ESPAD	SS	d, e
Macedonia (TFYR)	0.8	0.2 - 1.8	15 - 64	2008	ESPAD	SS	d, e
Montenegro	0.5	0.1 - 1.5	15 - 64	2008	ESPAD	SS	d, e
Romania	0.1		15 - 64	2007	ARQ	HHS	
Serbia	0.6	0.4 - 0.9	15 - 64	2008	Government sources	HHS	a, e
Turkey	0.3		15 - 64	2003	UNODC Estimate		
West & Central Europe							
Andorra					No recent, reliable estimate located		
Austria	0.5		15 - 64	2008	Govt.	HHS	a
Belgium	1.1		15 - 64	2007	ESPAD	SS	c, d, e
Cyprus	1.0		15 - 64	2006	ARQ		
Czech Republic	3.6		15 - 64	2008	Government	HHS	
Denmark	0.4		16 - 64	2008	ARQ	HHS	
Estonia	1.2		15 - 64	2008	Government	HHS	
Finland	0.5		15 - 64	2004	ARQ		
France	0.5		15 - 64	2005	ARQ		
Germany	0.4		18 - 64	2006	Government source	HHS	
Greece	0.2		15 - 64	2004	ARQ		
Hungary	0.5	0.2 - 0.8	18 - 64	2007	ARQ	HHS	
Iceland	0.5		15 - 64	2007	ESPAD	SS	d, e
Ireland	1.2		15 - 64	2007	Government source		
Italy	0.7		15 - 64	2008	ARQ	HHS	
Latvia	1.5		15 - 64	2007	ARQ		
Liechtenstein	0.5		15 - 64	2005	UNODC Estimate		
Lithuania	1.0		15 - 64	2008	ARQ	HHS	
Luxembourg					No recent, reliable estimate located		
Malta	0.9		15 - 64	2007	ESPAD	SS	d, e
Monaco	0.9		15 - 65	2007	ESPAD	SS	d, e
Netherlands	1.2		15 - 64	2005	ARQ		
Norway	0.5		15 - 64	2004	ARQ		
Poland	0.3		15 - 64	2006	ARQ		
Portugal	0.4		15 - 64	2007	ARQ		
San Marino					No recent, reliable estimate located		
Slovakia	1.6		15 - 64	2006	EMCDDA	HHS	
Slovenia	0.7		15 - 64	2007	ESPAD	SS	d, e
Spain	1.1		15 - 64	2007	Government source	HHS	
Sweden	0.3	0.2 - 0.3	15 - 64	2007	ESPAD	SS	d, e
Switzerland	0.3	0.3 - 0.4	15 - 64	2007	ESPAD	SS	d, e
United Kingdom					No recent, reliable estimate located		
United Kingdom (England and Wales)	1.8		16 - 59	2009	Government source	HHS	
United Kingdom (Northern Ireland)	1.8		15 - 64	2007	Government source	HHS	
United Kingdom (Scotland)	2.5		16 - 59	2009	Government source	HHS	
OCEANIA							
Oceania							
American Samoa					No recent, reliable estimate located		
Australia	4.2		15 - 64	2007	Government source/ NGO/Academic	HHS	
Christmas Islands					No recent, reliable estimate located		
Cocos (Keeling) Islands					No recent, reliable estimate located		
Cook Islands					No recent, reliable estimate located		
Fiji					No recent, reliable estimate located		
French Polynesia					No recent, reliable estimate located		
Kiribati					No recent, reliable estimate located		
Marshall Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

ECSTASY

Annual Prevalence of Use as a percentage of the population aged 15-64 (unless otherwise indicated)

Country or Territory	UNODC Best Estimate	Uncertainty Range	Ages	Year	Source (original)	Method	UNODC Adjusted
Micronesia (Federated States of)					No recent, reliable estimate located		
Nauru					No recent, reliable estimate located		
New Caledonia					No recent, reliable estimate located		
New Zealand	2.6		16 - 64	2008	Government source	HHS	
Norfolk Island					No recent, reliable estimate located		
Northern Mariana Islands					No recent, reliable estimate located		
Palau					No recent, reliable estimate located		
Papua New Guinea					No recent, reliable estimate located		
Pitcairn					No recent, reliable estimate located		
Samoa					No recent, reliable estimate located		
Solomon Islands					No recent, reliable estimate located		
Tonga					No recent, reliable estimate located		
Tuvalu					No recent, reliable estimate located		
Vanuatu					No recent, reliable estimate located		
Wallis and Futuna Islands					No recent, reliable estimate located		

Method: HHS=Household survey, SS=School survey, A=Adjusted from other sources, I=Indirect estimates, R=Registry. * approximate estimates

UNODC Adjustments: a=adjusted for age (15-64), b=population-based/household-type study/survey, c=adjusted from a limited geographic population-based study/survey, d=adjusted from school/youth survey, e=adjusted from lifetime/monthly prevalence adjusted to annual prevalence, f=adjusted from specialized population surveys (including Rapid Assessments), g=adjusted from treatment data, h=adjusted from drug registries, i=adjusted from HIV, problematic drug users (only for heroin), j=lifetime prevalence reported,
x=figure may include non-medical use of prescription opioids, z=figures may also include other non-ATS stimulants

The 'Method' and 'UNODC Adj.' columns have been completed only for more recent data included in previous and present issues of the World Drug Report.

4.2.2 Treatment demand

4.2.2.1 Primary drugs of abuse among persons treated for drug problems in Africa

			Distribution of main drugs in percentages*									
Country/ Territory	Source	Treatment Year	Cannabis	Opiates	Cocaine	Amphetamine - type Stimulants	Methaqualone	Depressants	Inhalants	Khat	Treatment Provided **	Data Primarily Reflect
Algeria	ARQ	1999/ 2008***	81.3 %	6.6 %	0.2 %	-	-	-	2.1 %	-	1,110	
Botswana	SENDU/ ARQ	2003/2006***	100.0 %								311	
Burkina Faso	ARQ	2008	58.8 %	-	20.6 %	20.6 %	-	-	-	-	65	a, d
Cape Verde	ARQ	2006									57	
Central African Republic	ARQ	2006	100.0 %								58	
Egypt	ARQ	2007	50.1 %	42.7 %		7.2 %	-	-	-	-	129,850	a
Eritrea	ARQ	2006	38.5 %	11.5 %	7.7 %	-	-	-	42.3 %	-	26	a
Ethiopia	ARQ	2006	18.8 %	18.8 %		-	-	-	-	62.5 %	64	h
Ghana	ARQ	2008	99.1 %	0.1 %	0.8 %	-	-	-	-	-	1,066	a, d
Kenya	Univ. (1)	2005	36.3 %	37.8 %	9.7 %	0.5 %	-	0.5 %	1.2 %	11.4 %	402	
Lesotho	SENDU	2004	100.0 %								54	d
Madagascar	ARQ	2007	60.8 %	-		-	-	39.2 %	-	-	148	a
Malawi	SENDU	2004	100.0 %								796	
Mauritius	ARQ	2008	13.2 %	86.8 %		-	-	-		-	10,000	c, g
Mozambique	SENDU	2004	33.3 %	54.7 %	11.4 %	-	-	-	-	-	150	a
Namibia	ARQ	2005/ 2006***	2.4 %	2.4 %	24.4 %	9.8 %	61.0 %	-	-	-	238	
Niger	ARQ	2006	69.2 %	-		30.8 %	-	-	-	-	168	
Nigeria	Govt.	2004	89.7 %	1.2 %	0.7 %	2.0 %	-	3.9 %	3.7 %	-	925	
Senegal	GAP	2005	78.0 %	1.0 %	2.0 %	1.0 %	-	-	11.0 %	-	202	a
Seychelles	ARQ	2007	55.0 %	45.0 %		-	-	-	-	-	149	a, d
South Africa	ARQ	2008	38.3 %	21.6 %	15.3 %	21.6 %	3.2 %	-	-	-	18,250	
Swaziland	SENDU	2004	92.2 %	0.9 %	0.9 %	-	4.7 %	0.9 %	-	-	128	
Tanzania	SENDU	2004	62.7 %	32.7 %		-	-	-	-	-	340	
Togo	ARQ	2008	81.3 %	8.4 %	10.3 %	-	-	-			127	d
Tunisia	ARQ	2008									720	f
Zambia	ARQ	2005									233	
Total											165,637	
Average (unweighted)			63.4 %	19.6 %	8.7 %	4.9 %	3.6 %	2.3 %	3.5 %	4.1 %		

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting.

** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine.

*** The second year specified is for the number of people treated (last column).

(1) Proxy: cohort of abusers identified from rehabilitation centres, treatment centres, hospitals, streets, and drug dens within 5 urban areas

Sources: UNODC, Annual Reports Questionnaires (ARQ) and Field Office (FO) data, Southern African Development Community Epidemiology Network on Drug Use (SENDU), International Psychology Reporter, UNODC Global Assessment Programme on Drug Abuse (GAP)

Data primarily reflect (codes)

a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)
g Opioid substitution treatment (eg methadone)
h First-time treatment entrants (not returning clients)
i Treatment admissions (not persons)

4.2.2.2 Primary drugs of abuse among persons treated for drug problems in the Americas

			Distribution of main drug in percentages*											
					Cocaine Group				Amphetamine-type stimulants					
Country/ Territory	Sources	Treatment Year	Cannabis	Opiates	Sum of all Cocaine	Cocaine	Basuco	Crack	Amphetamines-Group	Ecstasy-Group	Inhalants	Tranquilizers	Treatment Provided **	Data Primarily Reflect
Argentina	ARQ	2006-07	40.2%	0.5%	51.2%	51.2%	*14.0%*		0.5%	0.4%	7.3%		2,434	a
Bahamas	ARQ	2005	59.7%		40.3%	40.3%							647	b, d, e
Barbados	ARQ	2006											111	
Bolivia (Plurinational State of)	ARQ	2005											14,396	
Brazil	ARQ	2005											850,000	
Canada	CAMH/ DATIS (Ontario)	2009	31.7%	18.5%	37.7%	19.3%		18.4%	2.9%	2.7%	0.6%	3.6%	62,145	a (Ontario)
Chile	ARQ	2008	24.8%	0.06%	69.1%	19.0%	50.1%		0.2%	0.03%	1.6%	4.2%	7,750	d, e
Costa Rica	ARQ	2008	32.2%	0.5%	62.7%	62.7%							7,533	a
Dominican Republic	ARQ	2008	9.1%	17.6%	71.9%	71.9%			0.8%	0.6%			2,074	a
Ecuador	ARQ	2008	39.9%	4.2%	55.5%	55.5%			0.4%				3,550	d, e
El Salvador	ARQ	2004/2008***	13.8%		63.8%	17.2%		46.6%					12,774	d, e
Grenada	ARQ	2007	60.0%		40.0%	40.0%							250	a
Guatemala	ARQ	2007/2008***			36.8%	36.8%			42.1%	21.1%			3,500	d, e
Haiti	ARQ/ Govt.	2002/2007***	35.4%	2.1%	37.5%	37.5%						6.3%	27	
Honduras	ARQ	2006											7,500	
Jamaica	ARQ	2008	52.7%		47.3%	47.3%							283	d
Mexico	ARQ	2008	16.2%	18.7%	33.9%	33.9%			22.3%		9.0%		43,901	b
Nicaragua	Govt.	2004											1,502	d, e
Panama	Govt.	2006											992	d, e
Paraguay	Govt.	2005	39.0%	1.4%	33.0%	22.0%	2.6%	8.4%	1.6%	0.2%	9.7%	15.1%	804	
Peru	Govt.	2009	13.6%	6.3%	41.8%						5.4%	4.4%	3,376	
Saint Lucia	ARQ	2005	17.5%		82.5%	82.5%							40	d
Saint Vincent and the Grenadines	ARQ/ Govt.	2004/2005***	75.3%		24.7%	24.7%							196	d
Trinidad and Tobago	ARQ/ Govt.	2006/2006***	48.8%		51.1%	51.1%							861	d, e
Uruguay	ARQ	2008											9,159	a
United States of America	Govt. (TEDS)	2007	26.5%	31.1%	21.6%	21.6%			13.3%		0.1%	0.9%	1,411,539	b
Venezuela (Bolivarian Republic of)	Govt.	2008	73.3%	0.8%	25.2%	15.1%	4.7%	5.4%	0.06%	0.03%	0.3%	0.3%	8,816	a, b, c
Total													**2,456,160**	
Total North America			24.8%	22.8%	31.1%				12.8%	2.7%	3.2%	2.3%	1,517,585	
Total South America			39.7%	3.7%	49.1%				6.5%	3.7%	4.9%	6.1%	938,575	
Average (unweighted)			**37.4%**	**8.5%**	**46.4%**				**8.4%**	**3.6%**	**4.3%**	**5.0%**		

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting
** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine
*** The second year specified is for the number of people treated (last column).

Sources: UNODC Annual Reports Questionnaires data (ARQ);
Substance Abuse and Mental Health Services Administration (SAMHSA), Treatment episode dataset TEDS, USA;
Centre for Addiction and Mental Health (CAMH), Drug and Alcohol Treatment Information System (DATIS), Canada

Data primarily reflect (codes)
a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)
g Opioid substitution treatment (eg methadone)
h First-time treatment entrants (not returning clients)
i Treatment admissions (not persons)

4.2.2.3 Primary drugs of abuse among persons treated for drug problems in Asia

			Distribution of main drug in percentages*									
						Amphetamine-type stimulants						
Country/ Territory	Source	Treatment Year	Cannabis	Opiates	Cocaine	Amphetamines-Group	Ecstasy-Group	Inhalants	Sedatives	Other	Treatment Provided **	Data Primarily Reflect
Afghanistan	ARQ	2007									7,660	a
Armenia	ARQ	2006/ 2007***	-	98.5%	1.5%	-	-	-	-		122	d
Azerbaijan	ARQ / UNODC Est.	2003	20.0%	75.0%	-	-	-	5.0%	-			
Bangladesh	ARQ	2008	16.7%	83.3%	-	-	-	-	-		2,350	a, b
Brunei Darussalam	UNODC FO (DAINAP)	2007	-	-	-	100.0%	-	-	-		59	
China	Govt.	2008	-	79.7%	-	19.1%		-		1.2%	264,000	
Cambodia	Govt./ UNODC	2007	0.5%	0.1%	-	81.0%	0.3%	9.7%	0.3%		1,719	f
Georgia	ARQ	2008	0.1%	58.4%							1,337	
China, Hong Kong SAR	Govt	2008	6.0%	57.9%		8.7%				27.4%	1,316	f
India	ARQ	2007	24.8%	72.0%	0.5%	0.4%		2.4%			12,000	b, h
Indonesia	UNODC FO (DAINAP)	2006	20.9%	50.0%	1.9%	13.5%		60.0%	13.0%		3,713	
Iran (Islamic Republic of)	Govt.	2008	1.7%	83.4%	0.2%	2.6%	0.1%	-	-		587,109	
Israel	ARQ	2008									13,000	
Japan	Govt.	2005	2.3%	-	-	55.1%	-	14.5%	-		975	d
Jordan	ARQ	1999	-	21.4%	-	45.2%	-	6.0%	-		85	
Kazakhstan	ARQ	2008	3.8%	77.7%	-		-		-		8,360	d, e
Kuwait	ARQ	2005	28.8%	31.1%	4.0%	19.1%		1.0%	16.0%		908	d, f
Kyrgyzstan	ARQ	2007	19.4%	77.3%	-	-	-	-	-		879	d, e
Lao People's Democratic Republic	ARQ	2007		92.2%	-	7.7%	-	-	-		2,423	
Lebanon	ARQ / UNODC Est.	2004/ 2008***	32.0%	57.0%	4.0%	0.5%		-	6.0%		1,381	f
China, Macao SAR	ARQ	2008	0.3%	82.2%		0.3%			17.3%		388	d, e
Malaysia	UNODC FO (DAINAP)	2008	14.6%	73.2%	-	12.2%	-	-	-		11,792	
Maldives	ARQ	2003	13.0%	87.0%	-	-	-	-	-		126	d, e
Mongolia	ARQ	2001	28.6%	71.4%	-	-	-	-	-		7	
Myanmar	UNODC FO (DAINAP)	2008	0.4%	97.4%	-	2.2%	-	-	-		974	b, f
Nepal	ARQ	2006									900	a
Oman	ARQ	2002	-	100.0%	-	-	-	-	-		7	f

Pakistan	ARQ	2007	48.1%	52.0%							3,080	a
Philippines	UNODC FO (DAINAP)	2008	37.5%	-	1.4%	59.7%	1.1%	-	0.3%		3,372	
Qatar	ARQ	2008									150	a, d
Korea (Republic of)	ARQ	2008	5.0%	0.2%		94.7%					418	
Saudi Arabia	Govt./ Univ.	2005-06	55.8%	7.5%	-	72.8%	-	0.7%	5.5%		1,059	a, d
Singapore	ARQ	2008	5.6%	57.4%	-	18.1%	4.8%	-	14.1%		481	d, e
Syrian Arab Republic	ARQ	2006	0.2%	94.9%	0.9%	-	-	-	4.1%		674	
Sri Lanka	ARQ	2008	-	100.0%	-	-	-	-	-		2,724	f
Taiwan, Province of China	NBCD Taiwan (POC) Health	2007	0.1%	69.9%	0.1%	25.1%	0.5%	0.3%	2.8%		18,776	d
Tajikistan	ARQ	2004/ 2007***	-	99.2%	-	-	-	-	-		589	a, d
Thailand	ARQ	2008	7.0%	3.7%	0.02%	84.8%	0.2%	4.2%			84,190	
Turkmenistan	ARQ	2007	3.3%	96.7%	-	-	-	-	-		28,720	d, e
United Arab Emirates	ARQ	2008	35.7%	64.3%							45	
Uzbekistan	ARQ	2004/ 2008***	16.8%	78.8%	-	-	-	0.9%	0.6%		5,842	b
Viet Nam	UNODC FO (DAINAP)	2008	0.8%	98.0%	-	0.4%	-	-	-		45,035	
Total											**1,118,745**	
Average (unweighted)			**12.2%**	**61.8%**	**0.5%**	**21.3%**	**0.3%**	**3.4%**	**2.7%**			

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting.
** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine.
*** The second year specified is for the number of people treated (last column).
Sources: UNODC, Annual Reports Questionnaire (ARQ) and Field Office (FO) data;
UNODC Drug Abuse Information Network for Asia and the Pacific (DAINAP).

Data primarily reflect (codes)

a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)
g Opioid substitution treatment (eg methadone)
h First-time treatment entrants (not returning clients)
i Treatment admissions (not persons)

4.2.2.4 Primary drugs of abuse among persons treated for drug problems in Europe

			Distribution of main drug in percentages*										
						Amphetamine-type stimulants							
Country/ Territory	Source	Treatment Year	Cannabis	Opiates	Cocaine	Amphetamines-group	Ecstasy-group	Hallucinogens	Hypnotics and Sedatives	Inhalants/ Solvents	Other	Treatment Provided **	Data Primarily Reflect
Albania	ARQ	2006	11.5%	82.9%	5.7%							2,140	d, e
Andorra	ARQ	2008		8.3%								252	a, d
Austria	EMCDDA	2008	26.0%	46.6%	10.7%	3.1%	2.1%	0.5%	11.0%			10,619	
Belarus	ARQ	2004/2008***	15.2%	63.2%	0.05%	3.6%		1.2%	3.0%	12.3%		4,843	d/ a, d, e
Belgium	ARQ	2006	34.0%	36.2%	18.9%	10.1%	0.8%					7,261	
Bosnia and Herzegovina	ARQ	2007/2008***	48.3%	48.3%	0.7%	1.7%	1.0%					563	a
Bulgaria	ARQ	2007	0.4 %	98.8%	0.2%	0.4%			0.2 %			2,496	a
Croatia	ARQ	2008	13.6 %	80.4%	2.1%	0.9%	0.7%		2.3 %			7,265	c, d, e
Cyprus	ARQ	2008	23.0 %	63.8%	11.8 %	0.1 %	0.2 %		0.8 %	0.2 %		887	b
Czech Republic	ARQ	2007	12.9 %	23.3%	0.3%	61.6 %	0.1 %		0.7 %	1.1 %		8,487	
Denmark	ARQ	2007	34.8%	46.7%	7.2%	7.9%	1.0%	0.1%	2.2 %			4,204	d, e
Estonia	EMCDDA	2005		82.0%		5.8%						1,339	
Finland	EMCDDA/ ARQ	2007	12.5%	53.4%	0.2%	22.7%	0.3%	0.1%	10.8 %			2,221	
France	EMCDDA	2007	48.8%	39.8%	6.9%	0.3%	0.5%	0.3%			3.4 %	32,542	d, e
Germany	ARQ	2007	31.1%	35.0%	15.6%	9.3%	5.1%	3.7%		0.3 %		30,476	e
Gibraltar	ARQ	2008	23.8%	4.8%	66.7%				4.8 %			41	d
Greece	EMCDDA	2007	8.2%	86.2%	3.8%		0.1%	0.1%			1.7 %	4,786	
Macedonia (TFYR)	ARQ	2005	1.3%	98.7%								902	a, d, e
Hungary	ARQ	2008	27.6 %	16.9%	1.5%	5.2%	1.9 %		30.8 %		16.2 %	14,353	d, e
Iceland	ARQ	2007	33.3 %	2.8%	16.7%	38.9 %	11.1 %					1,800	a
Ireland	EMCDDA	2007	16.3%	63.9%	13.3%	0.7%	2.2%				3.6 %	5,775	
Italy	ARQ	2008	9.1%	73.3%	16.7%	0.1%	0.3%		0.5 %			167,011	b
Latvia	ARQ	2008	13.3 %	62.3%		16.1 %	0.9 %		4.7 %	2.7 %		803	b, d
Liechtenstein	ARQ	2006	81.3 %		15.6%	3.1 %						32	
Lithuania	ARQ	2008	0.7 %	96.0%	0.2%	3.2 %						5,809	d, e
Luxembourg	EMCDDA	2007	5.6%	76.9%	11.8%	0.3%	2.7%	1.6%			1.1 %	376	
Malta	EMCDDA	2006	11.8 %	76.2%	8.4%		2.7 %	0.1 %			0.7 %	758	
Moldova (Republic of)	ARQ/ UNODC	2004/ 2006****	51.8 %	39.1%		3.8 %						5,327	
Monaco	ARQ	2008	100.0 %									2	
Netherlands	ARQ	2007	23.9%	41.2%	29.8%	4.4%	0.7%					33,495	
United Kingdom (Northern Ireland)	Govt.	2008-09	39.0%	8.0%	11.0%				22.0 %			1,755	a
Norway	Govt.	2008	16.9 %	50.4%	1.6 %	18.5 %					12.5 %	9,657	d, e, i
Poland	EMCDDA	2007	2.9 %	17.1%	0.3%	7.8 %		0.4 %	10.2 %	1.3 %	60.1 %	13,198	d
Portugal	ARQ	2008	5.0%	81.2%	6.0%		0.1 %	0.2 %	0.2 %			38,532	b, e
Romania	ARQ	2008	6.0 %	85.3%	0.5%	0.2 %	0.9 %		7.1 %			3,353	
Russian Federation	ARQ	2008	7.0 %	91.7%	0.02%	1.2 %						358,120	
United Kingdom (Scotland)	Govt.	2007-08	13.5 %	68.6%	7.2%	2.1 %	0.9 %		5.4 %			12,562	a

Slovakia	ARQ	2008	21.0 %	45.9%	0.9%	32.0 %	0.2 %					1,515	
Slovenia	ARQ	2007	2.8 %	92.6%	2.2%		0.1 %		2.3 %	0.1 %		1,361	e
Spain	Govt.	2006	11.7%	39.3%	45.6%	0.8%	0.4%	0.1%	1.6 %			50,555	e
Sweden	ARQ	2007	18.1%	31.7%	2.1%	34.9%	0.3%		12.8 %			4,765	d, e
Switzerland	ARQ	2007	26.0 %	59.6%	13.7%	0.4 %	0.4 %					7,400	
Turkey	ARQ	2007	36.8 %	44.2%	4.0%	0.10 %	3.7 %		2.0 %	9.2 %		2,492	d
Ukraine	ARQ	2006		100.0%								41,208	
United Kingdom (England and Wales)	ARQ	2006-07	15.9%	64.8%	12.9%	3.8%	0.7%		1.9 %			128,208	d, e
Total Europe												**1,031,546**	
Total East Europe												475,574	
Total West Europe												555,972	
Average (unweighted) Europe			**22.4%**	**56.5%**	**9.8%**	**9.0%**	**1.5%**	**0.7%**	**6.2%**	**3.4%**			
Average (unweighted) East Europe			16.1%	66.8%	1.3%	9.6%	1.1%	0.8%	6.3%	4.5%			
Average (unweighted) West Europe			26.8%	48.3%	14.8%	8.5%	1.6%	0.7%	6.2%	0.3%			

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting.
** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine.
*** The second year specified is for the number of people treated (last column).

Sources: UNODC, Annual Reports Questionnaires (ARQ), governmtnet reports, and EMCDDA/ Focal Points.

Data primarily reflect (codes)
a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)

4.2.2.5 Primary drugs of abuse among persons treated for drug problems in Oceania

			Distribution of main drugs in percentages*								
						Amphetamine-type stimulants					
Country/ Territory	**Source**	**Treatment Year**	**Cannabis**	**Opiates**	**Cocaine**	**Amphetamines-group**	**Ecstasy-group**	**Hallucinogens**	**Sedatives**	**Treatment Provided ****	**Data Primarily Reflect**
Australia	Govt.	2007-08	40.1%	22.5%	0.6%	20.9%	1.7%	0.4%	3.2%	79,446	b
New Zealand	DAINAP/ ARQ	2008/2008***	52.8%	29.7%	0.4%	16.1%		1.0%		23,502	b, d
Total										**102,948**	
Average (unweighted)			**46.5%**	**26.1%**	**0.5%**	**18.5%**	**1.7%**	**0.7%**	**3.2%**		

* Note that treatment definitions and reporting differ from country to country; totals which exceed 100% represent poly-drug use reporting.
** Figures may reflect number of persons or treatment episodes depending on Member State; figures exclude alcohol and nicotine.
*** The second year specified is for the number of people treated (last column).

Source: UNODC, Annual Reports Questionnaire (ARQ) data
UNODC Drug Abuse Information Network for Asia and the Pacific (DAINAP).

Data primarily reflect (codes)
a Geographically limited reporting (eg the Capital city)
b Publicly funded treatment
c NGO/ privately funded treatment
d Inpatient/ hospitalization modality
e Outpatient modality
f Limited subpopulation (eg prison, youth, etc)
g Opioid substitution treatment (eg methadone)
h First-time treatment entrants (not returning clients)
i Treatment admissions (not persons)

كيفية الحصول على منشورات الأمم المتحدة

يمكن الحصول على منشورات الأمم المتحدة من المكتبات ودور التوزيع في جميع أنحاء العالم. استعلم عنها من المكتبة التي تتعامل معها أو اكتب إلى: الأمم المتحدة، قسم البيع في نيويورك أو في جنيف.

如何购取联合国出版物

联合国出版物在全世界各地的书店和经售处均有发售。 请向书店询问或写信到纽约或日内瓦的联合国销售组。

HOW TO OBTAIN UNITED NATIONS PUBLICATIONS

United Nations publications may be obtained from bookstores and distributors throughout the world. Consult your bookstore or write to: United Nations, Sales Section, New York or Geneva.

COMMENT SE PROCURER LES PUBLICATIONS DES NATIONS UNIES

Les publications des Nations Unies sont en vente dans les librairies et les agences dépositaires du monde entier. Informez-vous auprès de votre libraire ou adressez-vous à: Nations Unies, Section des ventes, New York ou Genève.

КАК ПОЛУЧИТЬ ИЗДАНИЯ ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ

Издания Организации Объединенных Наций можно купить в книжных магазинах и агентствах во всех районах мира. Наводите справки об изданиях в вашем книжном магазине или пишите по адресу: Организация Объединенных Наций, Секция по продаже изданий, Нью-Йорк или Женева.

CÓMO CONSEGUIR PUBLICACIONES DE LAS NACIONES UNIDAS

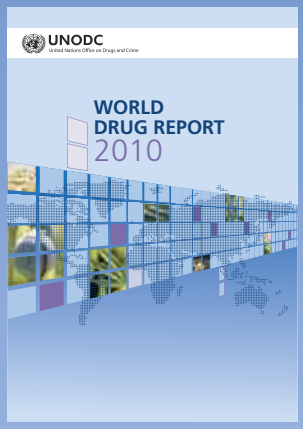
Las publicaciones de las Naciones Unidas están en venta en librerías y casas distribuidoras en todas partes del mundo. Consulte a su librero o diríjase a: Naciones Unidas, Sección de Ventas, Nueva York o Ginebra.

Printed in Malta
June 2010–1,700

United Nations publication
Sales No. E.10.XI.13
ISBN: 978-92-1-148256-0

UNODC
United Nations Office on Drugs and Crime

Vienna International Centre, PO Box 500, 1400 Vienna, Austria
Tel: +(43) (1) 26060-0, Fax: +(43) (1) 26060-5866, www.unodc.org



In 2009, the UN Member States decided to make further and decisive progress, within a decade, in controlling illicit drug supply and demand. Many illicit drug markets have reached global dimensions and require control strategies on a comparable scale. In that context, there is a need to better understand these transnational markets and the manner in which they operate. This year's *World Drug Report* is a contribution towards that objective. It opens with an analytical discussion of three key transnational drug markets: the markets for heroin, cocaine and amphetamine-type stimulants. The market discussion is followed by a presentation of statistical trends for all major drug categories. The latest information on drug production, seizures and consumption is presented. Finally, there is a discussion on the relationship between drug trafficking and instability.

57000
9 789211 482560